

# PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
US Department of Commerce  
United States Patent and Trademark  
Office, PCT  
2011 South Clark Place Room  
CP2/5C24  
Arlington, VA 22202  
ETATS-UNIS D'AMERIQUE  
in its capacity as elected Office

Date of mailing (day/month/year) 31 July 2001 (31.07.01)	
International application No. PCT/KR00/01026	Applicant's or agent's file reference OPP007055KR
International filing date (day/month/year) 08 September 2000 (08.09.00)	Priority date (day/month/year) 10 September 1999 (10.09.99)
Applicant PARK, Myung-shin	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
14 March 2001 (14.03.01)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was  
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Olivia TEFY Telephone No.: (41-22) 338.83.38
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## PATENT COOPERATION TREATY

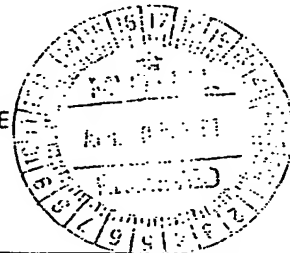
PCT

From the INTERNATIONAL BUREAU

NOTICE INFORMING THE APPLICANT OF THE  
COMMUNICATION OF THE INTERNATIONAL  
APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

To:

PARK, Jong-Kil  
9th Teheran Bd.  
825-33 Yoksam-dong  
Kangnam-ku  
Seoul 135-080  
RÉPUBLIQUE DE CORÉE

Date of mailing (day/month/year) 22 March 2001 (22.03.01)		
Applicant's or agent's file reference OPP007055KR		IMPORTANT NOTICE
International application No. PCT/KR00/01026	International filing date (day/month/year) 08 September 2000 (08.09.00)	Priority date (day/month/year) 10 September 1999 (10.09.99)
Applicant PARK, Myung-shin		

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:  
AU,KP,US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:  
AE,AG,AL,AM,AP,AT,AZ,BA,BB,BG,BR,BY,BZ,CA,CH,CN,CR,CU,CZ,DE,DK,DM,DZ,EA,EE,EP,ES,  
FI,GB,GD,GE,GH,GM,HR,HU,ID,IL,IN,IS,JP,KE,KG,KZ,LC,LK,LR,LS,LT,LU,LV,MA,MD,MG,MK,  
MN,MW,MX,MZ,NO,NZ,OA,PL,PT,RO,RU,SD,SE,SG,SI,SK,SL,TJ,TM,TR,TT,TZ,UA,UG,UZ,VN,YU.  
The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).
3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on  
22 March 2001 (22.03.01) under No. WO 01/20115

## REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a demand for international preliminary examination must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

## REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))

If the applicant wishes to proceed with the international application in the national phase, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

The International Bureau of WIPO 30, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer  J. Zahra
Facsimile No. (41-22) 740.14.35	Telephone No. (41-22) 338.83.38

INTERNATIONAL PRELIMINARY EXAMINATION REPORT  
(PCT Article 36 and Rule 70)

REC'D 23 JAN 2002

WIPO

PCT

Applicant's or agent's file reference OPP007055KR	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. <b>PCT/KR00/01026</b>	International filing date (day/month/year) 08 SEPTEMBER 2000 (08.09.2000)	Priority date (day/month/year) 10 SEPTEMBER 1999 (10.09.1999)
International Patent Classification (IPC) or national classification and IPC  <b>IPC7 E06B 3/42</b>		
Applicant  PARK, Myung-shin		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.
- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of \_\_\_\_\_ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  14 MARCH 2001 (14.03.2001)	Date of completion of this report  10 JANUARY 2002 (10.01.2002)
Name and mailing address of the IPEA/KR Korean Intellectual Property Office Government Complex-Daejeon, Dunsan-dong, Seo-gu, Daejeon Metropolitan City 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer  YOON, Sei Young  Telephone No. 82-42-481-5805



## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR00/01026

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

- ☒ the international application as originally filed
- ☒ the description:  
pages 1-12, as originally filed  
pages NONE, filed with the demand  
pages NONE, filed with the letter of \_\_\_\_\_
- ☒ the claims:  
pages 13,14, as originally filed  
pages NONE, as amended (together with any statement) under Article 19, filed with the demand  
pages NONE, filed with the letter of \_\_\_\_\_
- ☒ the drawings:  
pages 1-18, as originally filed  
pages NONE, filed with the demand  
pages NONE, filed with the letter of \_\_\_\_\_
- ☒ the sequence listing part of the description:  
pages NONE, as originally filed  
pages NONE, filed with the demand  
pages NONE, filed with the letter of \_\_\_\_\_

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language English which is

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☒ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

- ☒ the description, pages NONE
- ☒ the claims, Nos. NONE
- ☒ the drawings, sheet NONE

5. ☐ This opinion has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed." and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR00/01026

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Claims	1,2,3	YES
	Claims		NO
Inventive step (IS)	Claims	1,2,3	YES
	Claims		NO
Industrial applicability (IA)	Claims	1,2,3	YES
	Claims		NO

### 2. Citations and explanations (Rule 70.7)

The claims are in accordance with the criteria of novelty, inventional level and industrial applicability. Since the papers cited in the international search report each, together, and in combination with one or with some elses papers do not disclose the essence of the invention, none of the sources, including the document disclose a window-frame lower member having rail-filling device grooves in a window-frame base member, for inserting rail-filling devices into the rail-filling device grooves. the rail-filling devices comprise a rail filling device base member corresponding to the rail-filling device grooves, an elastic member, a rail-filling member, and a roller supporting member.

PCT REQUEST

OPP007055KR

Original (for SUBMISSION) - printed on 08.09.2000 10:47:49 AM

0 0-1	For receiving Office use only International Application No.	PCT/KR 00/01026
0-2	International Filing Date	08 September 2000 (08.09.00)
0-3	Name of receiving Office and "PCT International Application"	Korean Industrial Property Office P C T International Application
0-4 0-4-1	Form - PCT/RO/101 PCT Request Prepared using	PCT-EASY Version 2.91 (updated 01.07.2000)
0-5	Petition The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty	
0-6	Receiving Office (specified by the applicant)	Korean Industrial Property Office (RO/KR)
0-7	Applicant's or agent's file reference	OPP007055KR
I	Title of invention	THE SLIDING WINDOW AND DOOR SYSTEM OF FILLING A RAIL
II II-1 II-2 II-4 II-5	Applicant This person is: Applicant for Name (LAST, First) Address:	applicant and inventor all designated States PARK, Myung-shin 16-3, Gamjung-dong, Kimpo-si, 415-010 Kyungki-do Republic of Korea
II-6	State of nationality	KR
II-7	State of residence	KR
II-8	Telephone No.	+82-31-984-3323
IV-1	Agent or common representative; or address for correspondence The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:	agent
IV-1-1	Name (LAST, First)	PARK, Jong-Kil
IV-1-2	Address:	9th Teheran Bd., 825-33, Yoksam-dong, Kangnam-ku, 135-080 Seoul Republic of Korea
IV-1-3	Telephone No.	+82-2-3458-0800
IV-1-4	Facsimile No.	+82-2-539-0758
IV-1-5	e-mail	email@mutualip.com

## PCT REQUEST

OPP007055KR

Original (for SUBMISSION) - printed on 08.09.2000 10:47:49 AM


<b>V</b>	<b>Designation of States</b>	
<b>V-1</b>	Regional Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	<p>AP: GH GM KE LS MW MZ SD SL SZ TZ UG ZW and any other State which is a Contracting State of the Harare Protocol and of the PCT</p> <p>EA: AM AZ BY KG KZ MD RU TJ TM and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT</p> <p>EP: AT BE CH&amp;LI CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE and any other State which is a Contracting State of the European Patent Convention and of the PCT</p> <p>OA: BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG and any other State which is a member State of OAPI and a Contracting State of the PCT</p>
<b>V-2</b>	National Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	<p>AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH&amp;LI CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW</p>
<b>V-5</b>	<b>Precautionary Designation Statement</b> In addition to the designations made under items V-1, V-2 and V-3, the applicant also makes under Rule 4.9(b) all designations which would be permitted under the PCT except any designation(s) of the State(s) indicated under item V-6 below. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit.	
<b>V-6</b>	<b>Exclusion(s) from precautionary designations</b>	NONE
<b>VI-1</b>	<b>Priority claim of earlier national application</b>	
VI-1-1	Filing date	10 September 1999 (10.09.1999)
VI-1-2	Number	1999-38490
VI-1-3	Country	KR
<b>VII-1</b>	<b>International Searching Authority Chosen</b>	Korean Industrial Property Office (KIPO) (ISA/KR)

3/3

## PCT REQUEST

OPP007055KR

Original (for SUBMISSION) - printed on 08.09.2000 10:47:49 AM

VIII	Check list	number of sheets	electronic file(s) attached
VIII-1	Request	3	-
VIII-2	Description	7	-
VIII-3	Claims	2	-
VIII-4	Abstract	1	ab007055kr.txt
VIII-5	Drawings	18	-
VIII-7	TOTAL	31	
	Accompanying items	paper document(s) attached	electronic file(s) attached
VIII-8	Fee calculation sheet	✓	-
VIII-9	Separate signed power of attorney	✓	-
VIII-16	PCT-EASY diskette	-	diskette
VIII-18	Figure of the drawings which should accompany the abstract	4	
VIII-19	Language of filing of the international application	Korean	
IX-1	Signature of applicant or agent		
IX-1-1	Name (LAST, First)		
		PARK, Jong-Kil	

## FOR RECEIVING OFFICE USE ONLY

10-1	Date of actual receipt of the purported international application	08 September 2000 (08.09.00)
10-2	Drawings:	
10-2-1	Received	
10-2-2	Not received	
10-3	Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application	
10-4	Date of timely receipt of the required corrections under PCT Article 11(2)	
10-5	International Searching Authority	ISA/KR
10-6	Transmittal of search copy delayed until search fee is paid	

## FOR INTERNATIONAL BUREAU USE ONLY

11-1	Date of receipt of the record copy by the International Bureau	26 SEPTEMBER 2000	(26.09.00)
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(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
22 March 2001 (22.03.2001)

PCT

(10) International Publication Number  
**WO 01/20115 A1**

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(72) Inventor: PARK, Myung-shin [KR/KR]; 16-3, Gamjung-dong, Kimpo-si, Kyungki-do 415-010 (KR).

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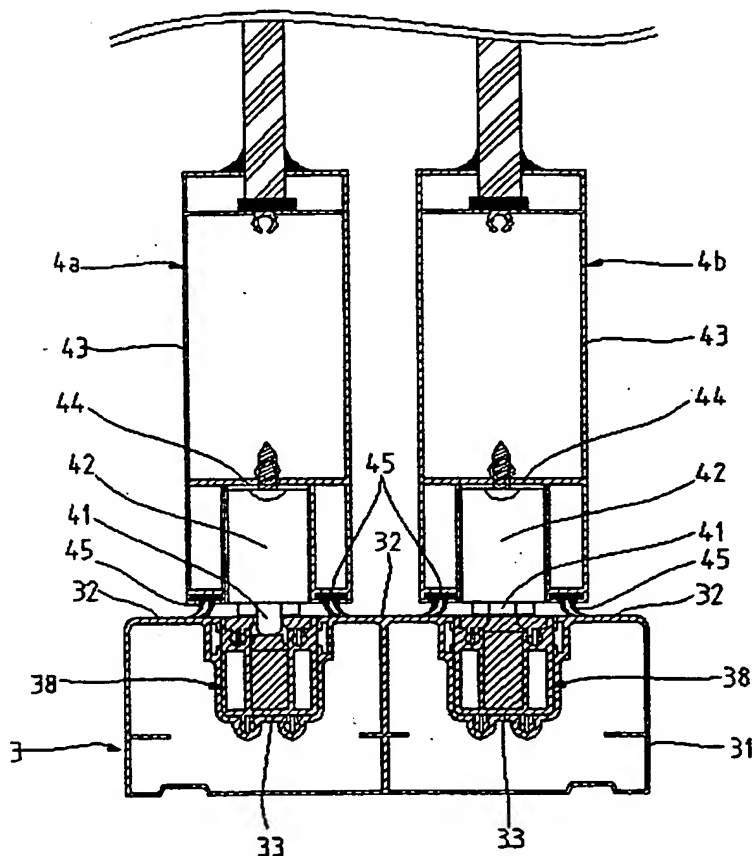
(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:  
— With international search report.

[Continued on next page]

(54) Title: THE SLIDING WINDOW AND DOOR SYSTEM OF FILLING A RAIL



(57) Abstract: A sliding window and door system includes a window frame lower member provided with surface members and rail filling device grooves in a window frame base member, a window frame upper member having a window frame base member similar to the window frame base member of the window frame lower member, and rail filling device grooves acting as supporting grooves to which upper insertion portions of window leaf upper members are inserted, the window leaf upper members being provided with control rollers mounted in the upper insertion portions to prevent the window leaf from being detached, thereby forming an even structure.

Original Pub Tex 2-51DED



WO 01/20115 A1

## THE SLIDING WINDOW AND DOOR SYSTEM OF FILLING A RAIL

A sliding door system acts as the same with a sliding window system in the specification, and thus description of the window includes description  
5 of the door.

### TECHNICAL FIELD

The present invention relates to a sliding window and door system, which cuts off external dust, rainwater, air, noise, and heat by mounting a  
10 window frame provided with upper, lower, left, and right members assembled in a rectangular shape on a wall and mounting a window leaf provided with upper, lower, left, and right members assembled in a rectangular shape in the window frame.

### 15 BACKGROUND ART

A related art window and door system will be described with reference to the accompanying drawings.

FIG. 1 is a front view showing a window and door to which a related art window and door system is applied. FIG. 2 is a sectional view taken along  
20 line A-A of FIG. 1.

The related art window and door system includes a window frame lower member 1 and window leaf lower members 2a and 2b. The window frame lower member 1 is provided with exposed rails 11 and 11. The window

leaf lower members 2a and 2b are provided with rollers 21 and 21 mounted and arranged on the rails 11, and are guided by mohair members 22, 22, 22, and 22 and the rails 11 and 11 to open and close.

In the aforementioned related art window and door system, since the  
5 window leaf is opened and closed depending on the exposed rails, rainwater is drained out between the rails. For this reason, air tightness, water tightness, and thermal insulation cannot be improved. This could lead to low energy efficiency.

Furthermore, since the window leaf is inserted into the window frame,  
10 it is simple to assembly and disassembly the window leaf. However, it is likely that the window leaf is detached due to strong wind or manipulation. Accordingly, when the window leaf is used in a multistoried building, the window leaf is likely to be fallen down by being detached from the window frame. This causes dangerous situations.

15 Moreover, since stains of dust and rainwater piled between the rails are not easily removed, cleaning is difficult. If the piled dust is left uncleaned, the piled dust is raised when opening and closing the window leaf, thereby causing the air to be impure. It is therefore difficult to maintain a clean state. If a drainage outlet for rainwater between the rails is blocked by the dust and  
20 the like, or in case of a heavy rain accompanied by strong wind, damage may occur due to the rainwater. Also, an uneven lower structure has limitation in improving the appearance of the window and door system.

### DISCLOSURE OF THE INVENTION

Accordingly, the present invention is directed to a sliding window and door system that substantially obviate one or more of the problems due to limitations and disadvantages of the related art.

5           An object of the present invention is to provide a sliding window and door system of filling a rail having an even structure to remarkably improve air tightness, water tightness, and thermal insulation.

          Another object of the present invention is to provide a sliding window and door system, which is likely to maintain a cleaning state and prevents a  
10 window leaf from being detached, thereby ensuring stability.

          Other object of the present invention is to provide a sliding window and door system, which is likely to improve appearance depending on taste and functions, thereby providing high quality.

          Additional features and advantages of the invention will be set forth in  
15 the description which follows, and in part will be apparent from the description, or may be learned by practice of the invention. The objectives and other advantages of the invention will be realized and attained by the structure particularly pointed out in the written description and claims thereof as well as the appended drawings.

20           To achieve these and other advantages and in accordance with the purpose of the present invention, as embodied and broadly described, a sliding window and door system according to the present invention includes: a window frame (or door frame) lower member provided with surface

members and rail filling device grooves in a window frame (or door frame) base member, for inserting rail filling devices into the rail filling device grooves, the rail filling devices including a rail filling device base member corresponding to the rail filling device grooves, a rail filling member, and a roller supporting member; window leaf (or door leaf) lower members for driving height control rollers provided with projections to correspond to the rail filling systems by inserting the control rollers into roller grooves formed in window leaf (or door leaf) base members to be guided by the projections and the rail filling devices, and for mounting gaskets to maintain air tightness between the window leaf base members and the surface members; a window frame (or door frame) upper member having a window frame (or door frame) base member similar to the window frame base member of the window frame lower member, expect that the rail filling device grooves correspond to supporting grooves to which upper insertion portions of window leaf (or door leaf) upper members are inserted; and the window leaf upper members provided with control rollers mounted in the upper insertion portions to prevent the window leaf from being detached, thereby forming an even structure.

## 20 BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are included to provide a further understanding of the invention and are incorporated in and constitute a part of this specification, illustrate embodiments of the invention and together with

the description serve to explain the principles of the invention.

In the drawings:

FIG. 1 is a front view showing a window and door to which a related art window and door system is applied;

5        FIG. 2 is a sectional view taken along line A-A of FIG. 1;

FIG. 3 is a front view showing a window and door to which a window and door system according to the present invention is applied;

FIG. 4 is a sectional view taken along line B-B of FIG. 3;

FIG. 5 is a schematic view showing a rail filling system of Fig. 4;

10       FIG. 6 shows another embodiment of FIG. 4;

FIG. 7 shows other embodiment of FIG. 4;

FIG. 8 is a sectional view taken along line C-C of FIG. 3;

FIG. 9 is an installation view of a detachment prevention roller of FIG.

8;

15       FIG. 10 shows another embodiment of FIG. 8;

FIG. 11 shows other embodiment of FIG. 8;

FIG. 12 is a front view showing a window and door viewed from an outside, in which an outdoor window leaf (or door leaf) is replaced with a fixed window (or fixed door);

20       FIG. 13 is a sectional view taken along line D-D of FIG. 12;

FIG. 14 is a sectional view taken along line E-E of FIG. 12;

FIG. 15 is a front view showing a window and door viewed from an outside, in which an indoor window leaf (or door leaf) is replaced with a fixed

window (or fixed door);

FIG. 16 is a sectional view taken along line F-F of FIG. 15;

FIG. 17 is a sectional view taken along line G-G of FIG. 15; and

FIG. 18 is an installation view of a fixed window (or fixed door) groove

5 cover.

#### BEST MODE FOR CARRYING OUT THE INVENTION

Reference will now be made in detail to the preferred embodiments of the present invention, examples of which are illustrated in the accompanying drawings.

10 "Outdoor" and "indoor" which will now be described in sectional views respectively mean "left side" and "right side" on the drawings.

FIG. 3 is a front view showing a window and door viewed from an outside, to which a window and door system according to the present invention is applied. Sectional views taken along lines B-B and C-C are  
15 shown in FIGS. 4, 6, 7, 8, 10, and 11.

FIGS. 4, 6, and 7 are sectional views taken along line B-B of FIG. 3, in which main elements of a sliding window and door system are shown.

Referring to FIG. 4, a window frame lower member 3 includes a window frame base member 31, surface members 32, 32, and 32, rail filling  
20 device grooves 33 and 33, and rail filling devices 38 and 38. The rail filling device grooves 33 and 33 for installation of the rail filling devices 38 and 38 and the surface members 32, 32, and 32 are provided in the window frame base member 31. The rail filling device 38 having a rail filling device base

member 34 corresponding to the rail filling device grooves 33 and 33, an elastic member 35, a rail filling member 36, and a roller supporting member 37 is inserted into the rail filling device grooves 33 and 33 provided in the window frame base member 31. An even structure of the window frame lower member 3 is constructed as above (see a schematic view of the rail filling system of FIG. 5).

The construction of window leaf lower members 4a and 4b will now be described. Height control rollers 42 and 42 provided with projections 41 and 41 to correspond to the rail filling devices 38 and 38 are inserted into roller grooves 44 and 44 provided in window leaf base members 43 and 43, so that the rollers 42 and 42 are guided and driven by the projections 41 and 41 and the rail filling devices 38 and 38. To maintain air tightness between the window leaf base members 43 and 43 and the surface members 32, 32 and 32, gaskets 45, 45, 45 and 45 are mounted. Thus, the window leaf lower members 4a and 4b can correspond to the window frame lower member 3.

The operation and driving principles of the height control rollers 42 and 42 provided with the projections 41 and 41 of the window leaf lower members 4a and 4b and the rail filling devices 38 and 38 of the window frame lower member 3 will be described below.

The projections 41 and 41 of the rollers 42 and 42 push the rail filling member 36 of the rail filling devices 38 and 38 and contracts the elastic member 35. Thus, the projections are inserted into the grooves provided between the roller supporting members 37. The rollers 42 and 42 are guided



to the grooves between the roller supporting members 37 and then driven. If the rollers 42 and 42 are driven, the contracted elastic member 35 is returned to its original state and the rail filling member 36 fills the grooves between the roller supporting members 37 to form an even surface.

5 In FIGS. 6 and 7, to form the even structure of FIG. 4 in a frame type structure, window frame lower members 5 and 6 include surface members 52, 52, 52, 62, 62, and 62 provided in window frame base members 51 and 61 in a frame type. In this case, rainwater is smoothly guided to the outside.

Heights of window leaf lower members 7a and 7b are controlled to  
10 correspond to the window frame lower members 5 and 6.

FIGS. 8, 10, and 11 are sectional views taken along line C-C of FIG. 3, in which main elements of a sliding window and door system are shown.

In FIG. 8, a window frame base member 81 of a window frame upper member 8 is similar to the window frame base member 31 of the window  
15 frame lower member, but is mounted in an upper side of the window and door system. In this case, the rail filling device grooves 33 and 33 correspond to supporting grooves 82 and 82, to which upper insertion portions 91 and 91 of window leaf upper members 9a and 9b are inserted.

The window leaf upper members 9a and 9b include the upper  
20 insertion portions 91 and 91 to correspond to the window frame upper member 8. Control rollers 93 and 93 for preventing the window leaf from being detached by cutting a cutting portion 92 of the upper insertion portions 91 and 91 are mounted in the window leaf upper members 9a and 9b (see

installation view of FIG. 9).

The construction of preventing the window leaf from being detached will be described below.

For installation of the upper insertion portions 91 and 91, the height of  
5 the control rollers 93 and 93 is downwardly controlled. The upper insertion  
portions 91 and 91 are deeply inserted into the supporting grooves 82 and 82  
to facilitate installation of the lower member. After installation of the lower  
member, an inner space formed between the upper insertion portions 91 and  
91 and the supporting grooves 82 and 82 is finished up by upwardly  
10 controlling the height of the control rollers 93 and 93.

FIG. 8 shows an installation state, in which the window leaf upper  
members 9a and 9b cannot be detached due to the control rollers 93 and 93.

Since the window frame base member 81 of the window frame upper  
member 8 is equivalent to the window frame base member 31 of the window  
15 frame lower member 3, the even structure can be constructed in a frame type  
structure.

In FIGS. 10 and 11, window frame upper members 10 and 20 of a  
frame type structure and window leaf upper members 30a and 30b are  
shown. The height of the window leaf upper members 30a and 30b is  
20 controlled to correspond to the window frame upper members 10 and 20.

FIG. 12 is a front view showing a window and door viewed from an  
outside, in which an outdoor window leaf is replaced with a fixed window.  
FIGS. 13 and 14 are sectional views taken along lines D-D and E-E of FIG.

12.

In FIG. 13, the window leaf lower member 3 is replaced with an outdoor window leaf 4a in such a manner that a fixed window 40 is mounted into an outdoor rail filling device groove 39, and finished up with a gasket 401 and a supporting member 402.

In FIG. 14, a window frame upper member 8 is replaced with an outdoor window leaf 9a in such a manner that a fixed window 40 is mounted into an indoor supporting groove 83 and finished up with a gasket 401.

FIG. 15 is a front view showing a window and door viewed from an outside, in which an indoor window leaf is replaced with a fixed window. FIGS. 16 and 17 are sectional views taken along lines F-F and G-G of FIG. 15.

In FIG. 16, the window leaf lower member 3 is replaced with an indoor window leaf 4b in such a manner that a fixed window 50 is mounted into an indoor rail filling device groove 3a and finished up with gaskets 501 and 501 and a supporting member 502.

In FIG. 17, a window frame upper member 8 is replaced with an indoor window leaf 9b in such a manner that a fixed window 50 is mounted into an indoor supporting groove 84 and finished up with gaskets 501 and 501.

In FIG. 18, a groove 60 in a portion having no fixed windows 40 and 50 in FIGS. 13, 14, 16 and 17 is finished up with a fixed window groove cover 70.

### INDUSTRIAL APPLICABILITY

As aforementioned, the sliding window and door system according to the present invention has the following advantages.

In the related art, a drainage outlet is provided in a rail to drain out  
5 rainwater because the rail is exposed. However, in the present invention, rainwater is guided to the outside on the surface. Accordingly, the rainwater is essentially prevented from being induced into the indoor. Also, since no separate drainage outlet is provided, air tightness, water tightness, and thermal insulation can be improved. Since the process steps can be reduced,  
10 the productivity can be improved.

In the upper structure, a detachment prevention structure is applied, so that vertical movement of the window leaf in the upper and lower directions can be avoided. Accordingly, safety can be ensured by solving the problem related to detachment due to strong wind or manipulation.

15 The related art window and door system has a problem in that movement and noise of the window leaf occur and a window frame should be exchanged with another one if the rail is abraded. However, in the present invention, a rail filling system is only to be exchanged with another one if the rail is abraded. Accordingly, the production cost and time can be reduced.

20 Furthermore, in the present invention, since an even structure not an uneven structure is formed, pile of dust is avoided and it is easy to maintain cleaning state. Appearance such as an even type and a frame type can be improved depending on taste and function. Thus, a window and door system

of high quality can be obtained.

While the present invention has been described and illustrated herein with reference to the preferred embodiments thereof, it will be apparent to those skilled in the art that various modifications and variations can be made  
5 therein without departing from the spirit and scope of the invention. Thus, it is intended that the present invention covers the modifications and variations of this invention that come within the scope of the appended claims and their equivalents.

WHAT IS CLAIMED IS:

1. A sliding window and door system comprising:

a window frame (or door frame) lower member (3) provided with surface members (32,32,32) and rail filling device grooves (33,33) in a window frame (or door frame) base member (31), for inserting rail filling devices (38,38) into the rail filling device grooves (33,33), the rail filling devices (38,38) comprising a rail filling device base member (34) corresponding to the rail filling device grooves (33,33), an elastic member (35), a rail filling member (36), and a roller supporting member (37);

10 window leaf (or door leaf) lower members (4a,4b) for driving height control rollers (42,42) provided with projections (41,41) to correspond to the rail filling devices (38,38) by inserting the control rollers (42,42) into roller grooves (44,44) formed in window leaf (or door leaf) base members (43,43) to be guided by the projections (41,41) and the rail filling devices (38,38), and

15 for mounting gaskets (45,45,45,45) to maintain air tightness between the window leaf base members (43,43) and the surface members (32,32,32);

a window frame (or door frame) upper member (8) having a window frame (or door frame) base member (81) similar to the window frame base member (31) of the window frame lower member (3), except that rail filling device grooves (33,33) correspond to supporting grooves (82,82) to which

20 upper insertion portions (91,91) of window leaf (or door leaf) upper members (9a,9b) are inserted; and

the window leaf upper members (9a,9b) provided with control rollers

(93,93) mounted in the upper insertion portions (91,91) to prevent the window leaf from being detached, thereby forming an even structure.

2. The sliding window and door system of claim 1, further comprising:

5 window frame (or door frame) lower members (5,6) provided with surface members (52,52,52,62,62,62) in a frame type;

window leaf (or door leaf) lower members (7a,7b) having a height controlled to correspond to the window frame lower members (5,6);

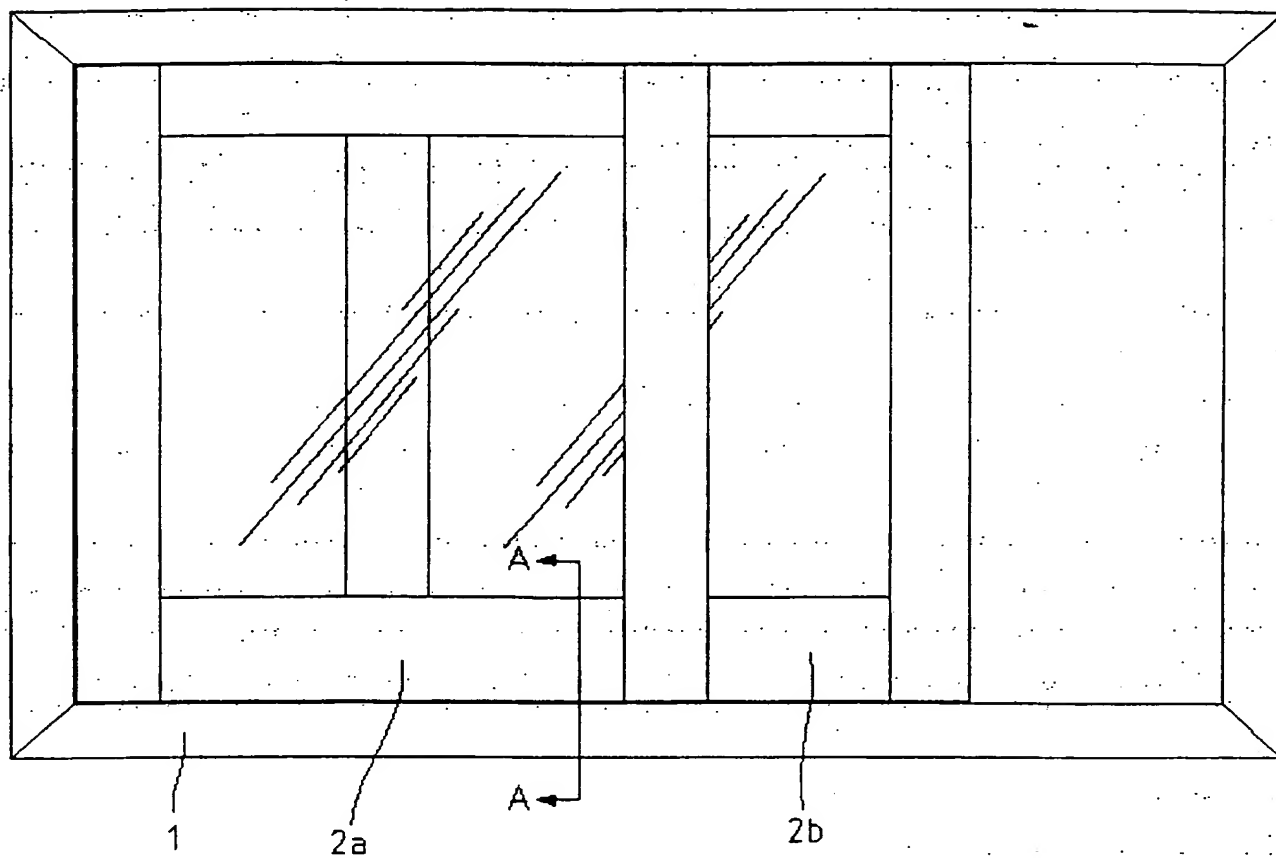
10 window frame (or door frame) upper members (10,20) provided with surface members (102,102,102,202,202,202) formed in a frame type; and

window leaf (or door leaf) upper members (30a,30b) having a height controlled to correspond to the window frame upper members (10,20), thereby forming a frame type structure.

3. The sliding window and door system of claim 1 or 2, wherein  
15 the window leaves (or door leaves) (4a,7a,9a,30a) from an outside or the window leaves (or door leaves) (4b,7b,9b,30b) from an inside are replaced with fixed windows (or fixed doors) (40,50) and finished up with gaskets (401,401,501,501), and a groove (60) in a portion where the fixed windows (or fixed doors) are not mounted is finished up with a fixed window (or fixed  
20 door) groove cover (70).

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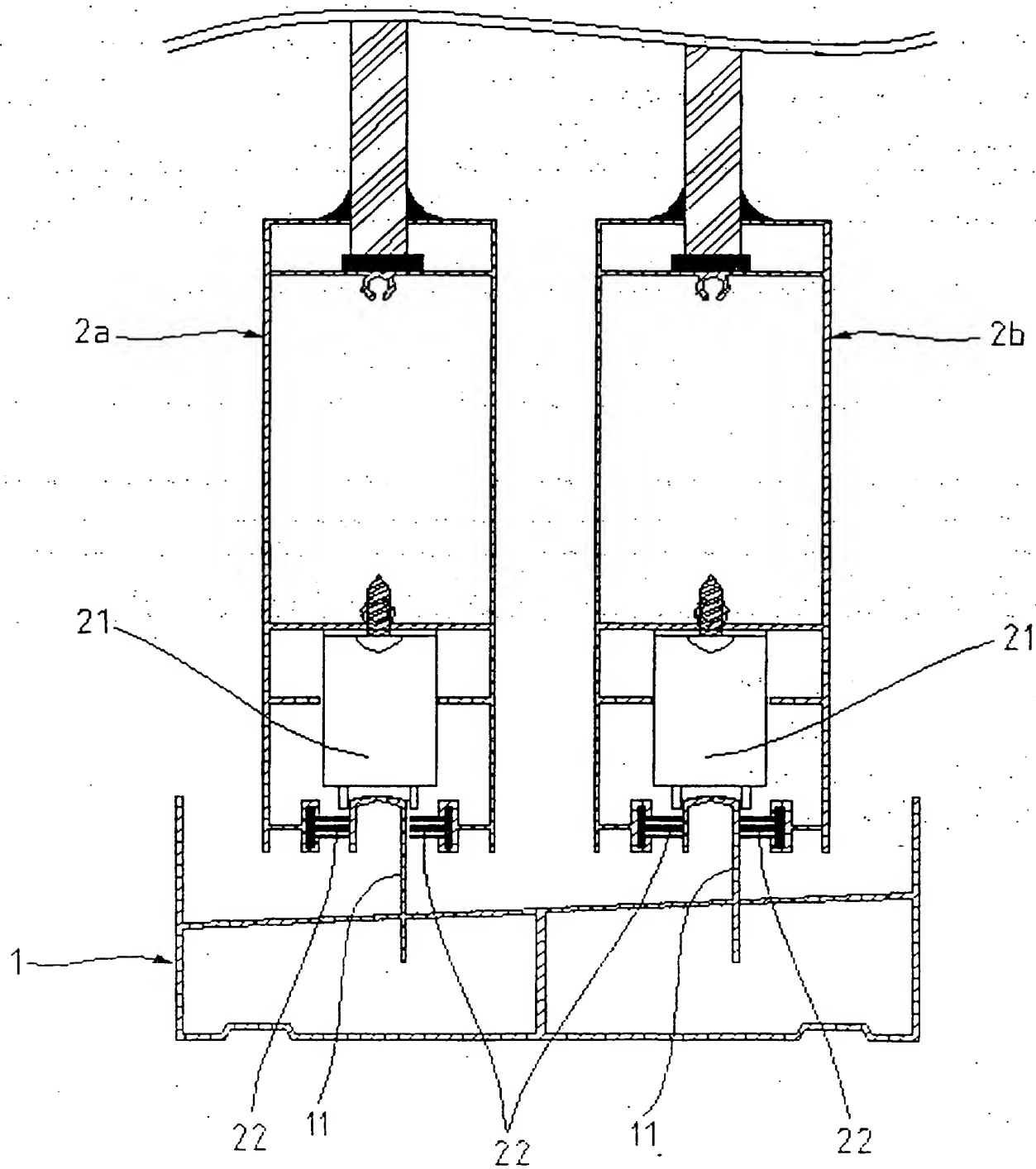
FIG. 1





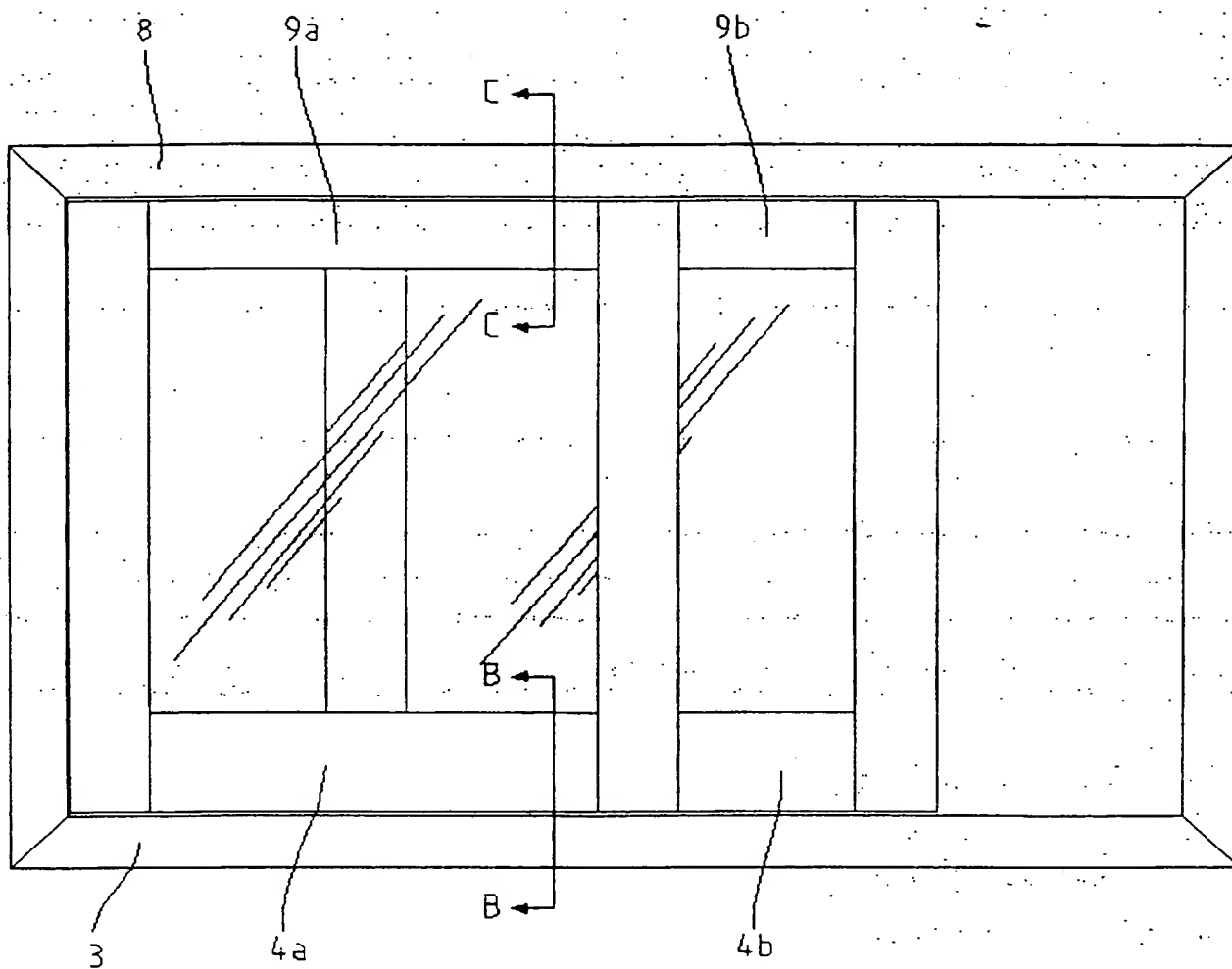
2/18

FIG. 2



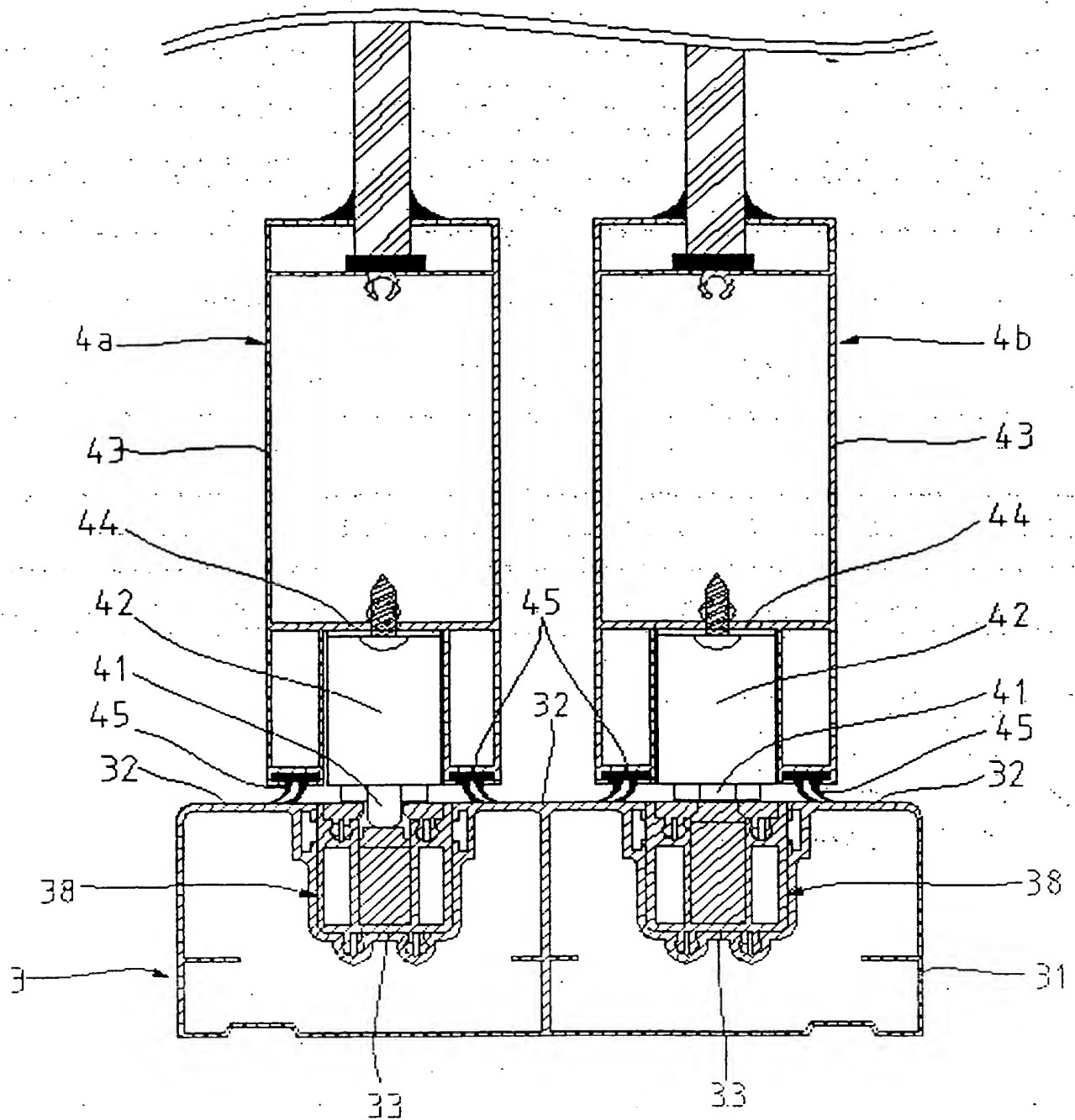
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FIG. 3



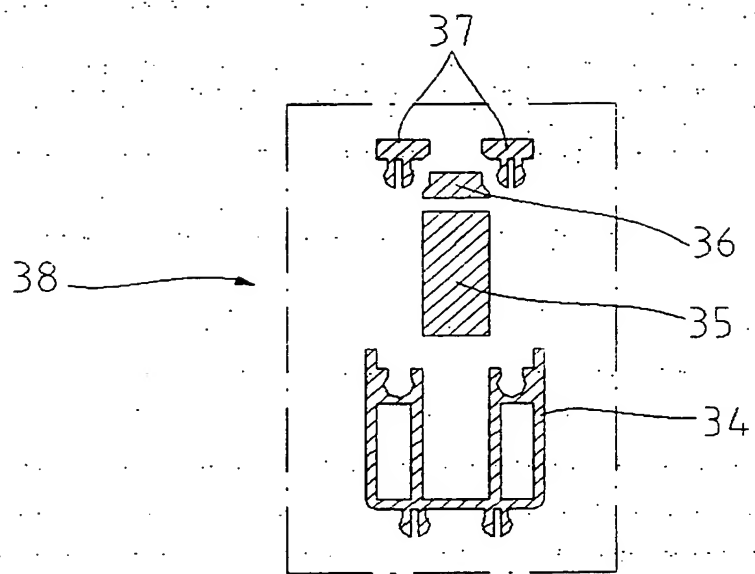
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FIG. 4



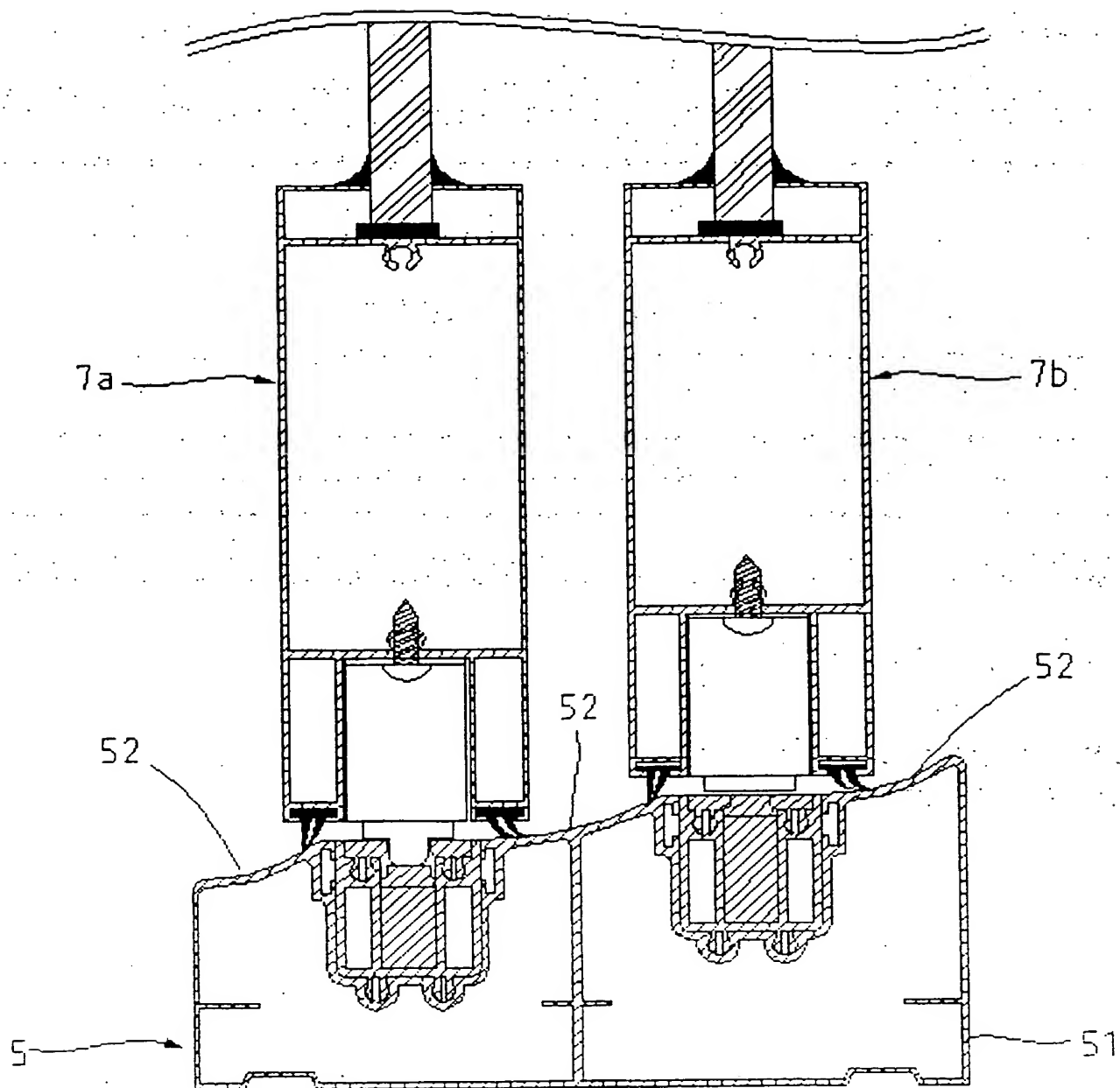
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FIG. 5



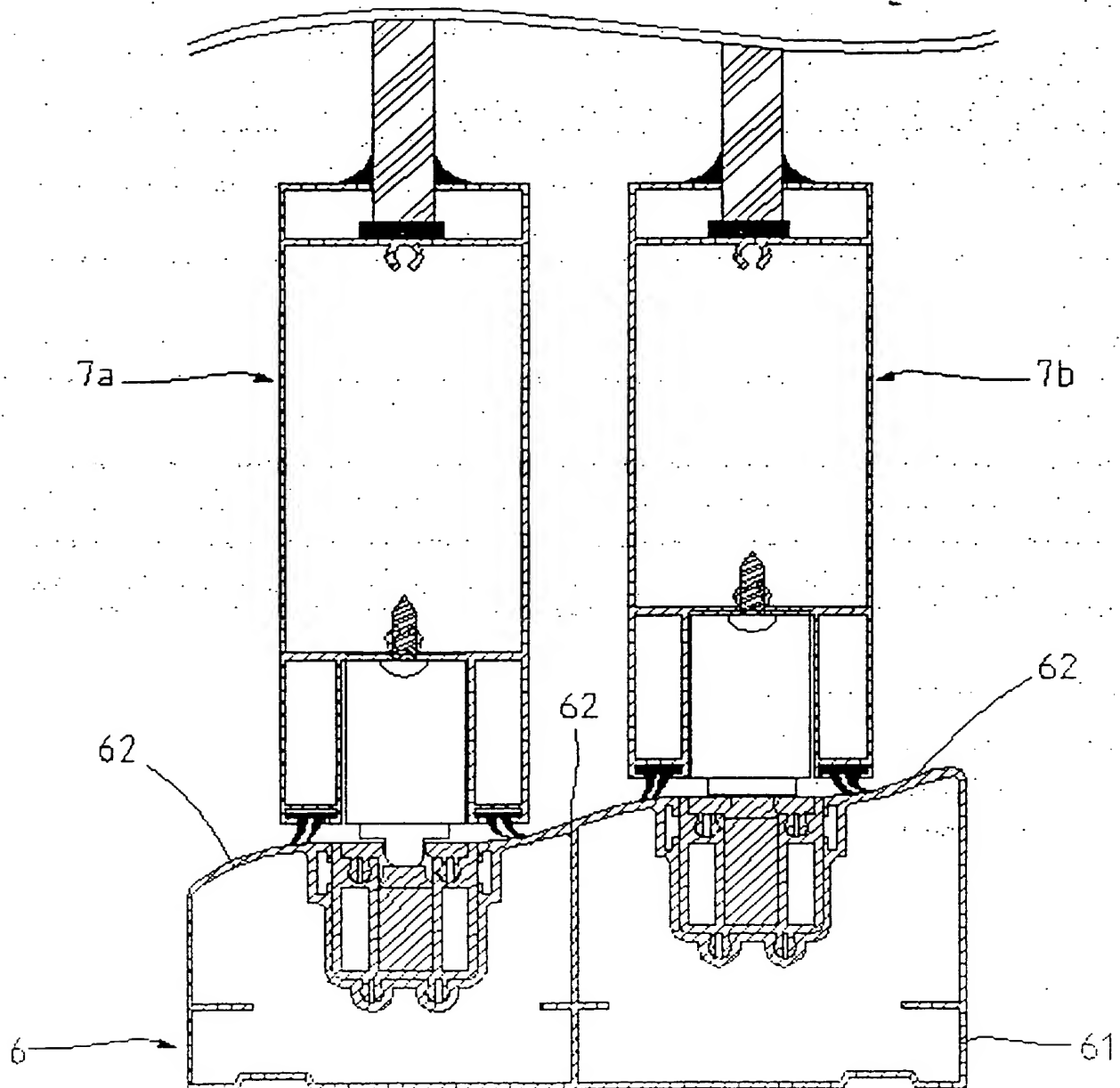
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FIG. 6



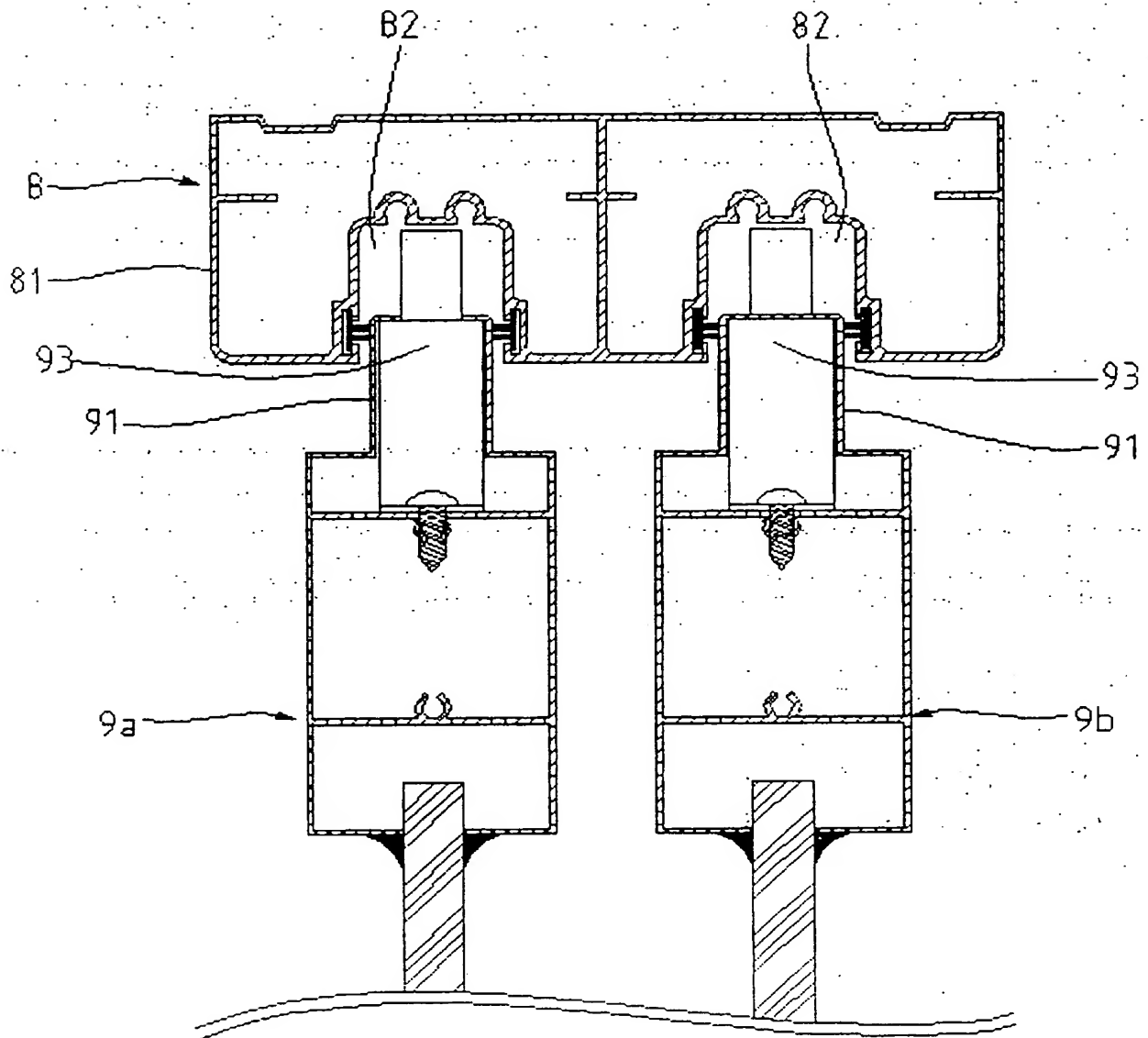
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FIG. 7



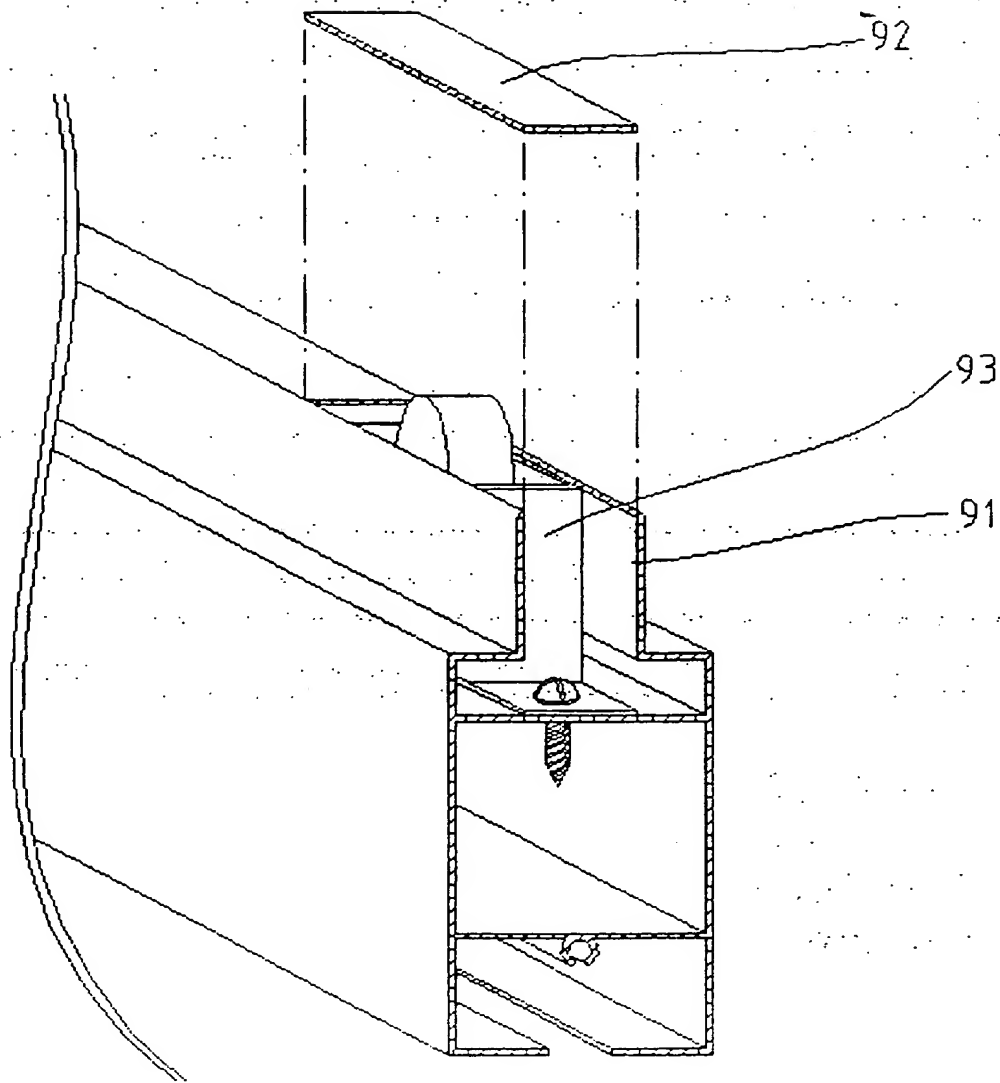
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FIG. 8



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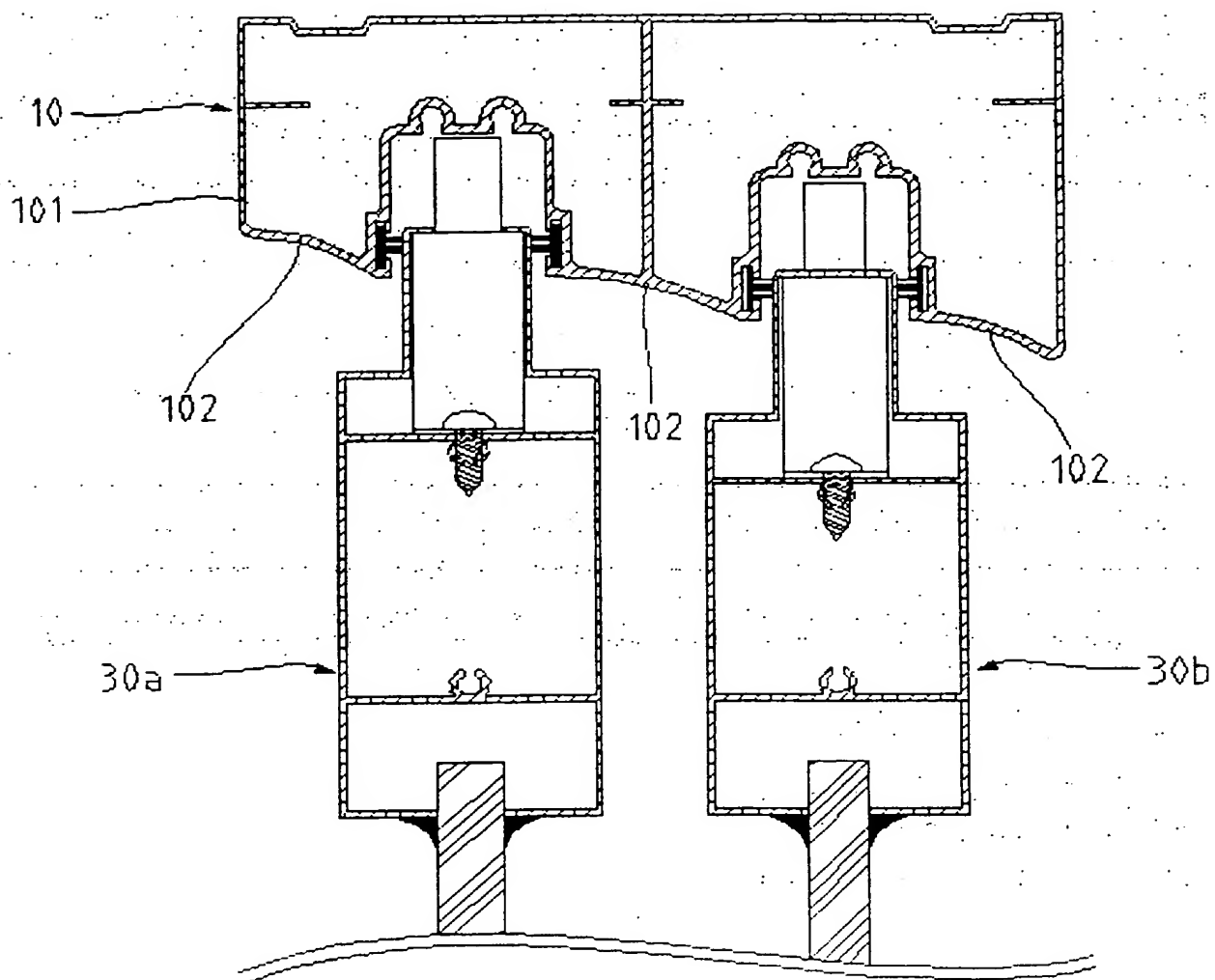
FIG. 9





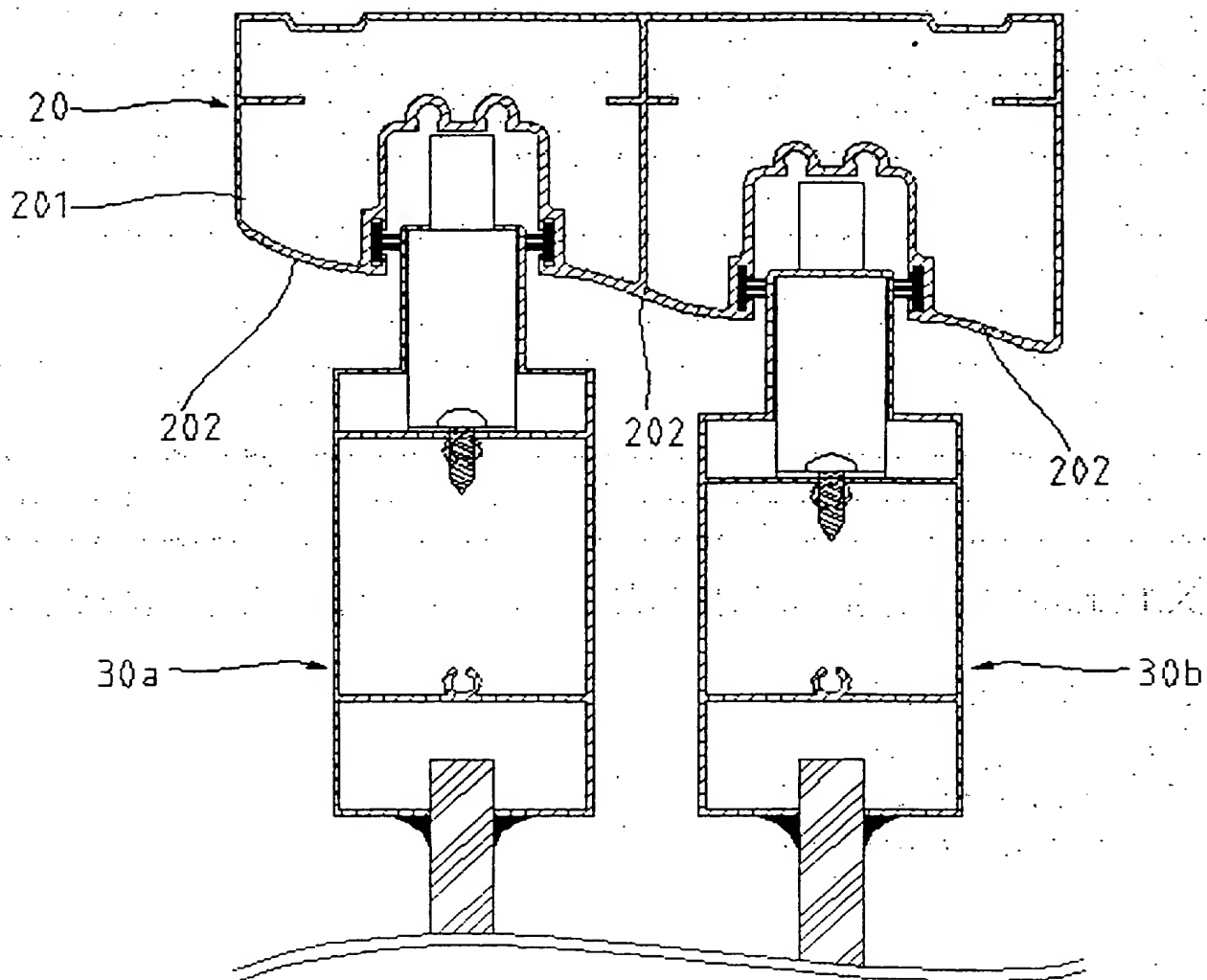
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FIG. 10



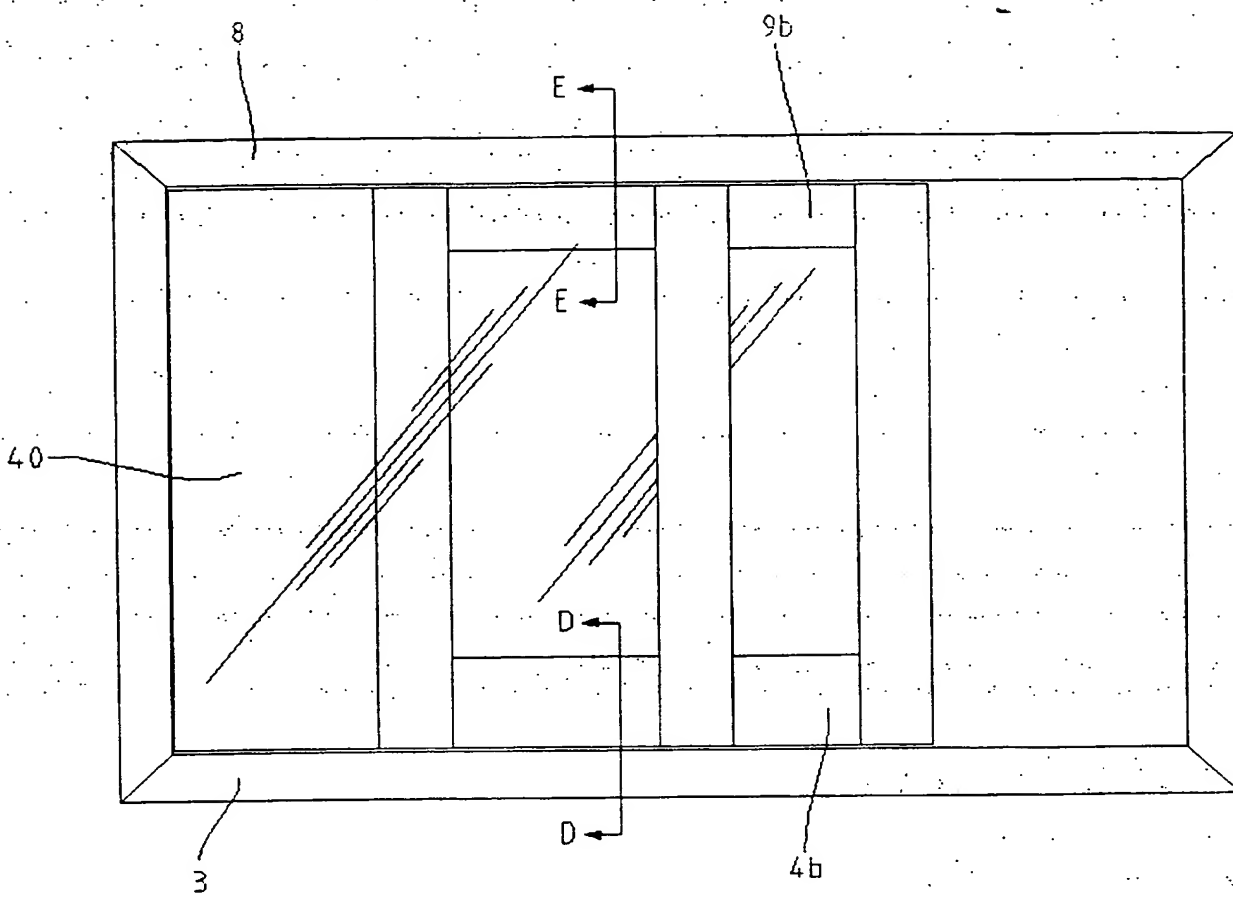
11/18

FIG. 11



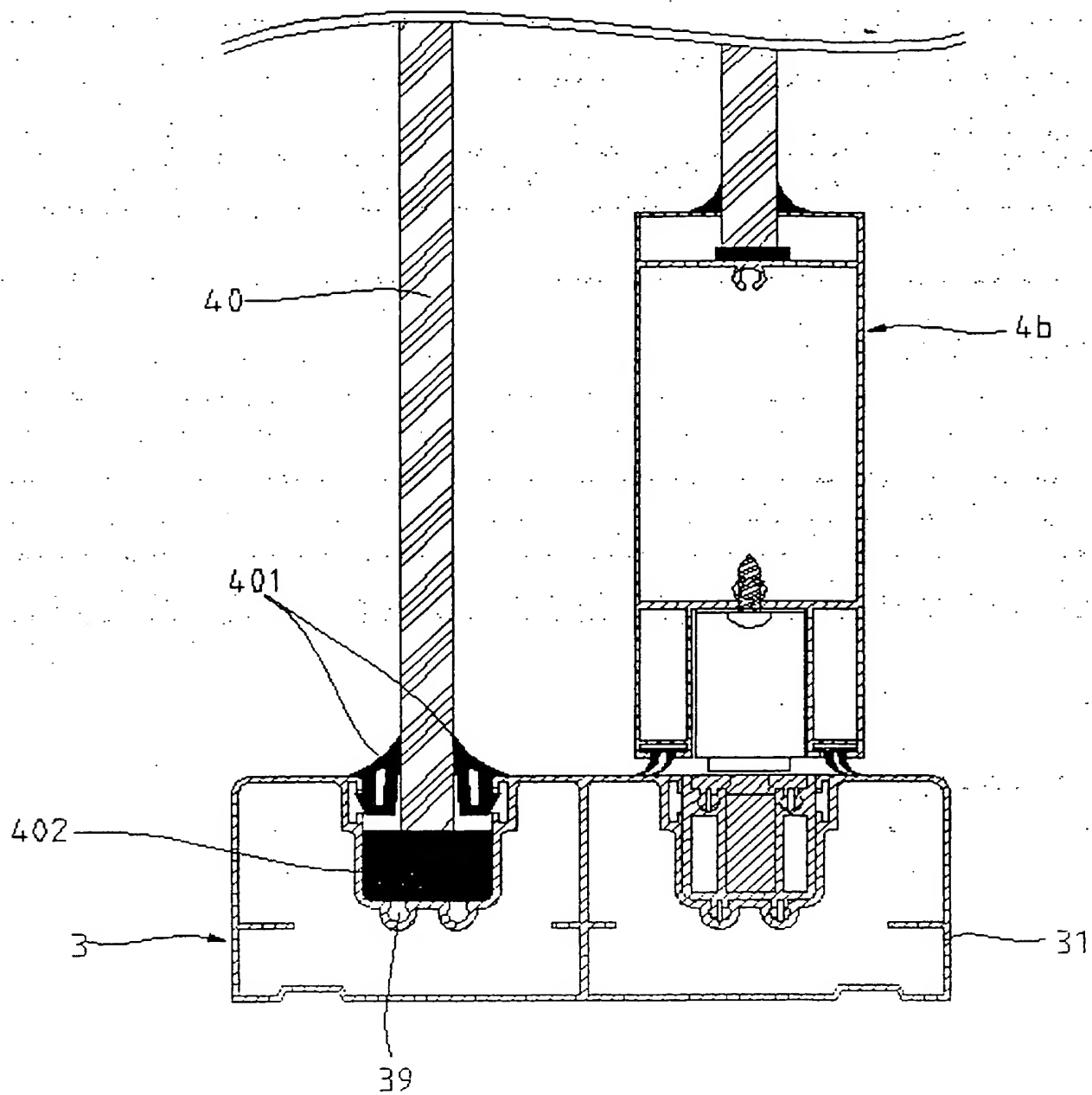
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FIG. 12



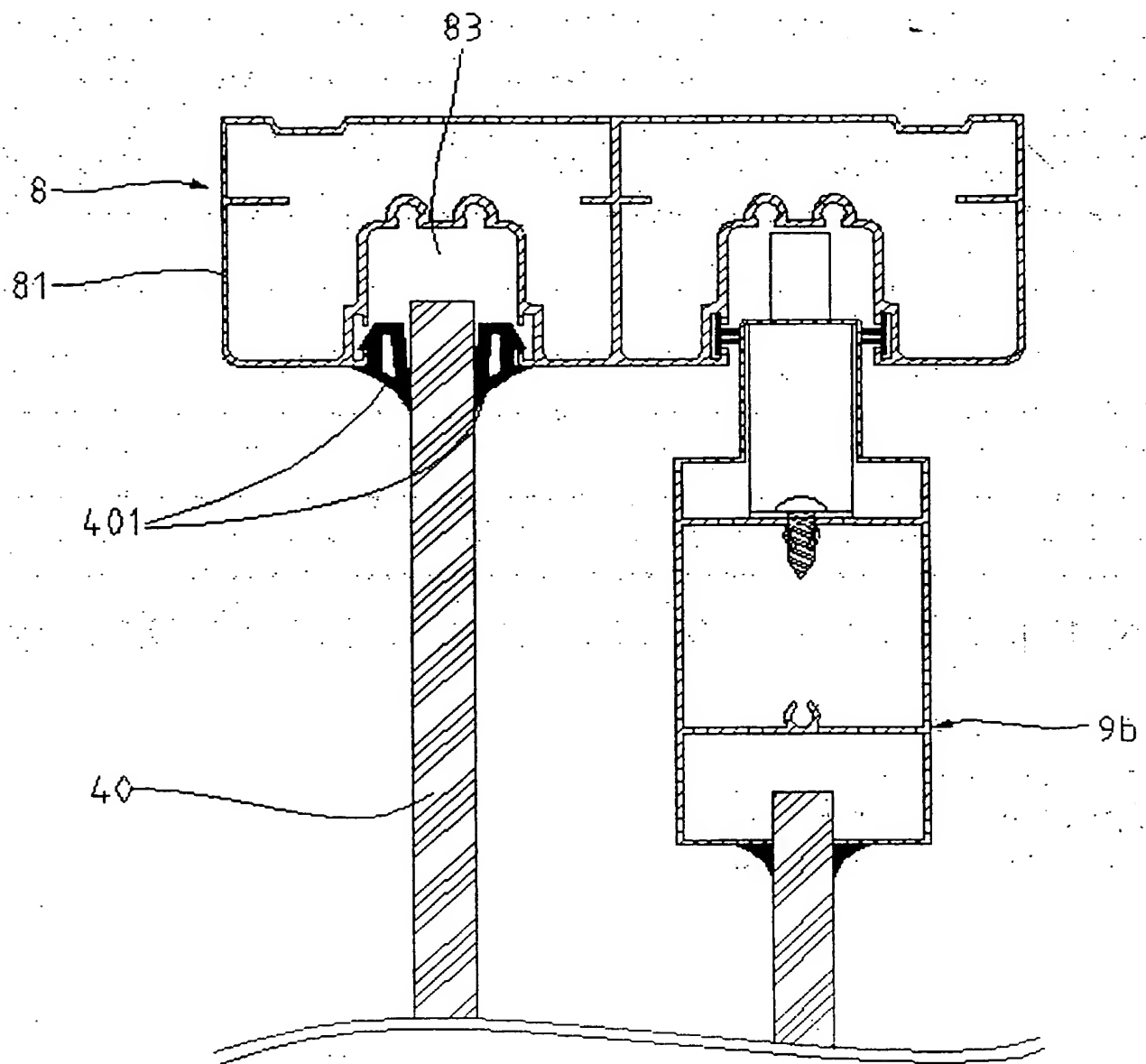
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FIG. 13



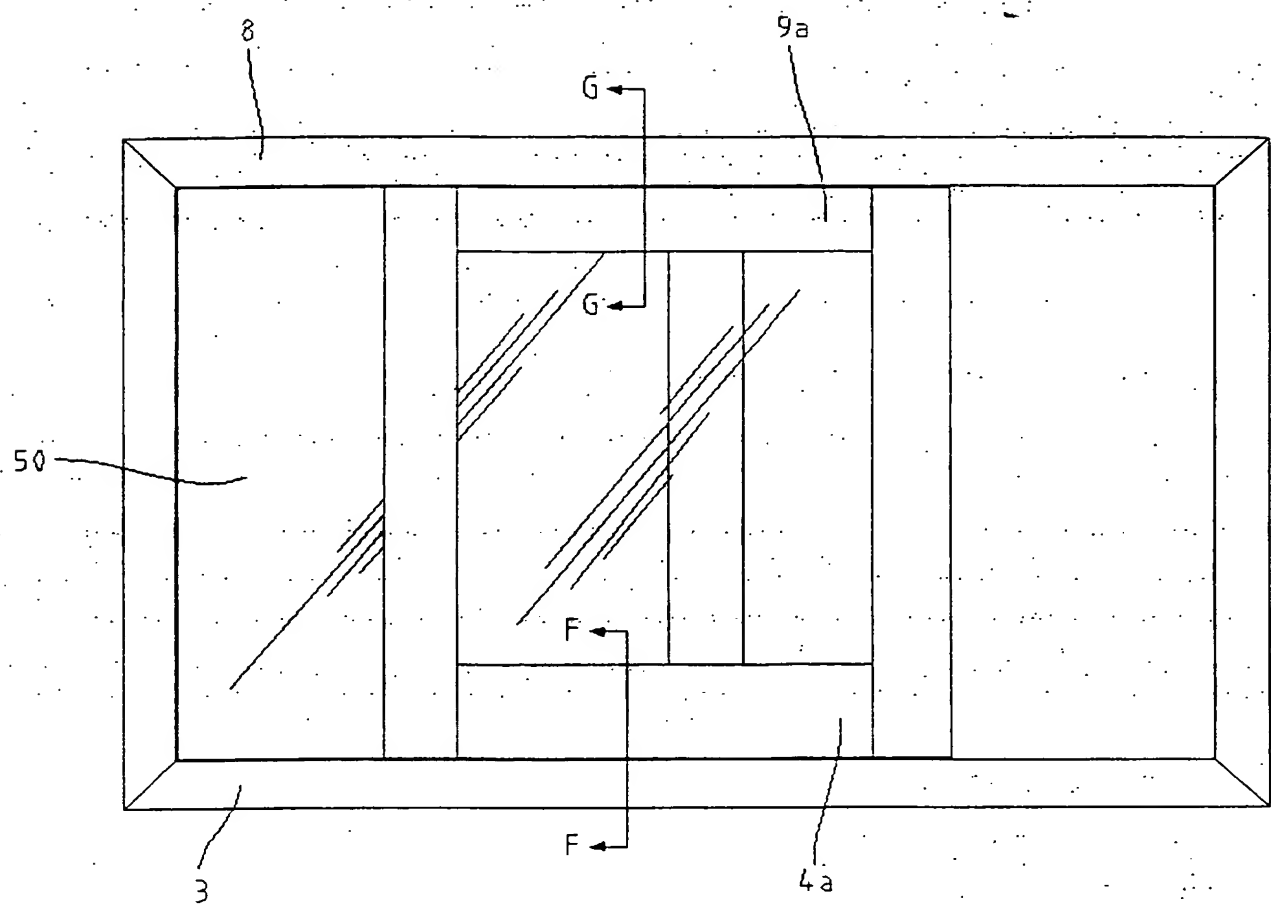
14/18

FIG. 14



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FIG. 15



## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/KR00/01026**A. CLASSIFICATION OF SUBJECT MATTER****IPC7 E06B 3/42**

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC7 E06B 1/18,1/32,1/36 E06B 3/00,3/32,3/42

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

KR,JP: classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KR 97-52066 U(Hankukhojinkongup Co.,LTD) 8 September 1997 see all documents	1
A	KR 94-26997 U(Ju-il Co., LTD) 9 December 1994 see all documents	1
A	KR 96-38040 U(Park Myong-sin) 21 November 1996 see figure 1	1
A	JP 06-158962 A(Sanwa Shutter Corp) 7 June 1994	1
A	JP 08-177317 A(YKK Achitect Pord KK) 9 July 1996	1
A	JP 58-31375 U(Kida Co.,LTD) 1 March 1983	1

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

27 DECEMBER 2000 (27.12.2000)

Date of mailing of the international search report

28 DECEMBER 2000 (28.12.2000)

Name and mailing address of the ISA/KR

Korean Industrial Property Office  
Government Complex-Taejon, Dunsan-dong, So-ku, Taejon  
Metropolitan City 302-701, Republic of Korea  
Facsimile No. 82-42-472-7140

Authorized officer

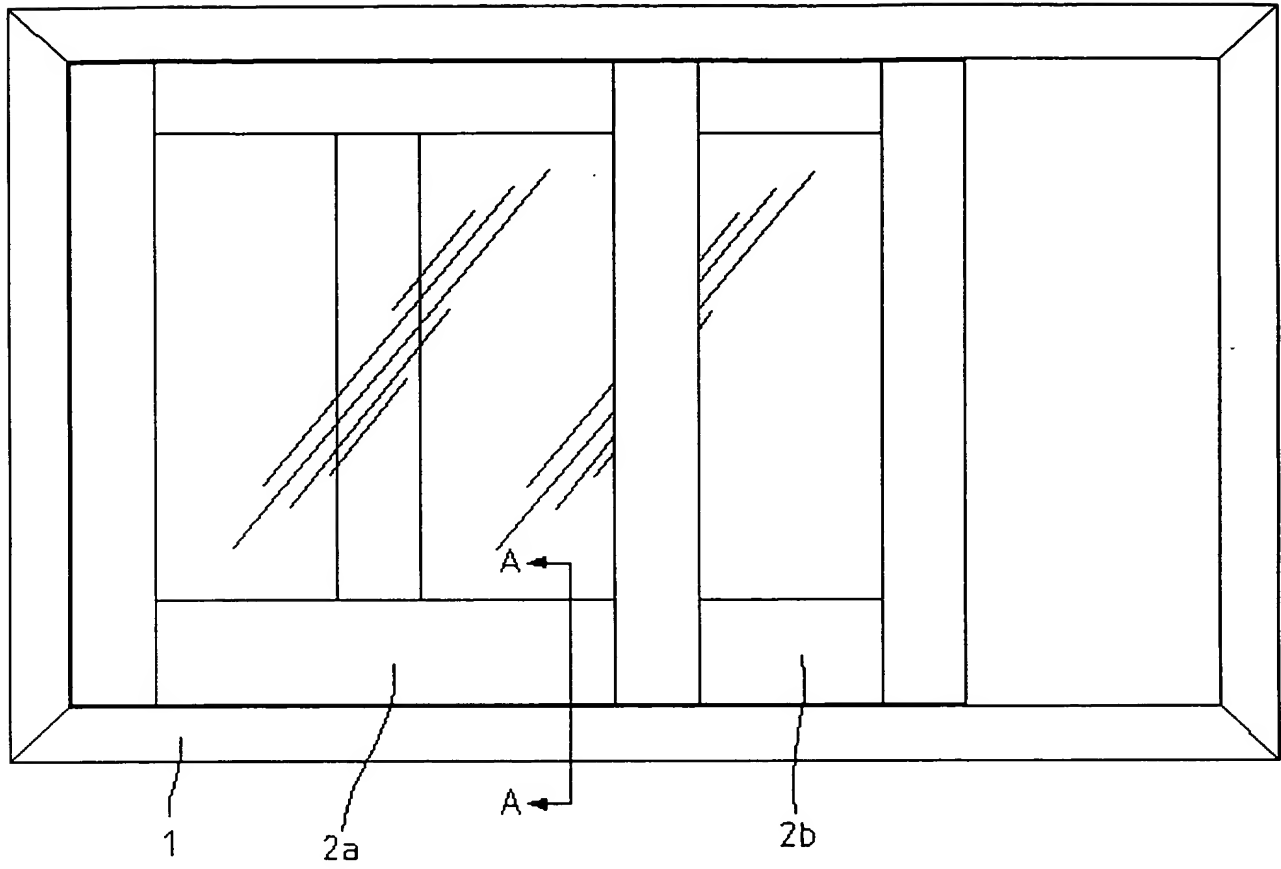
YOON, Sei Young

Telephone No. 82-42-481-5805



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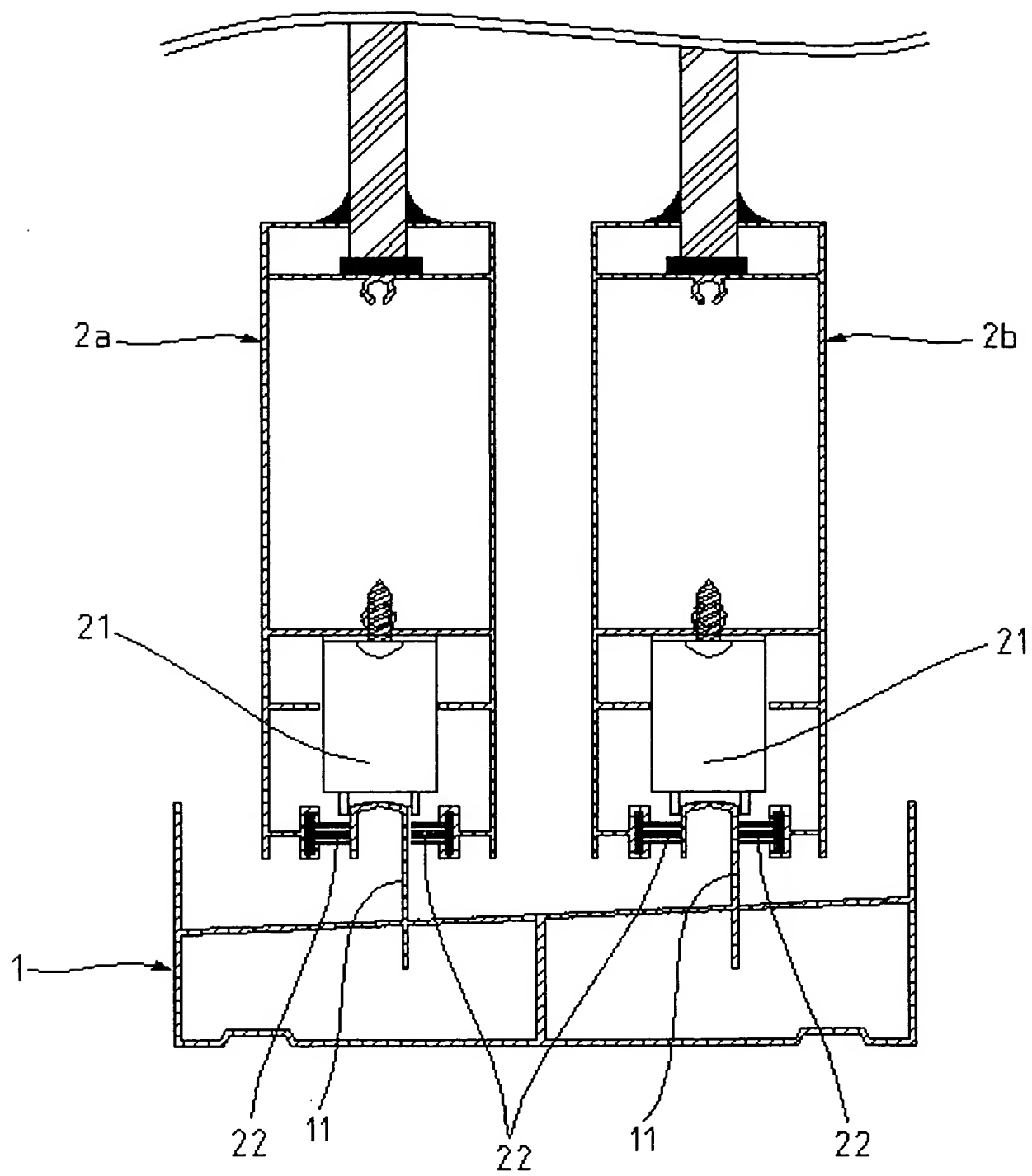
【도 1】





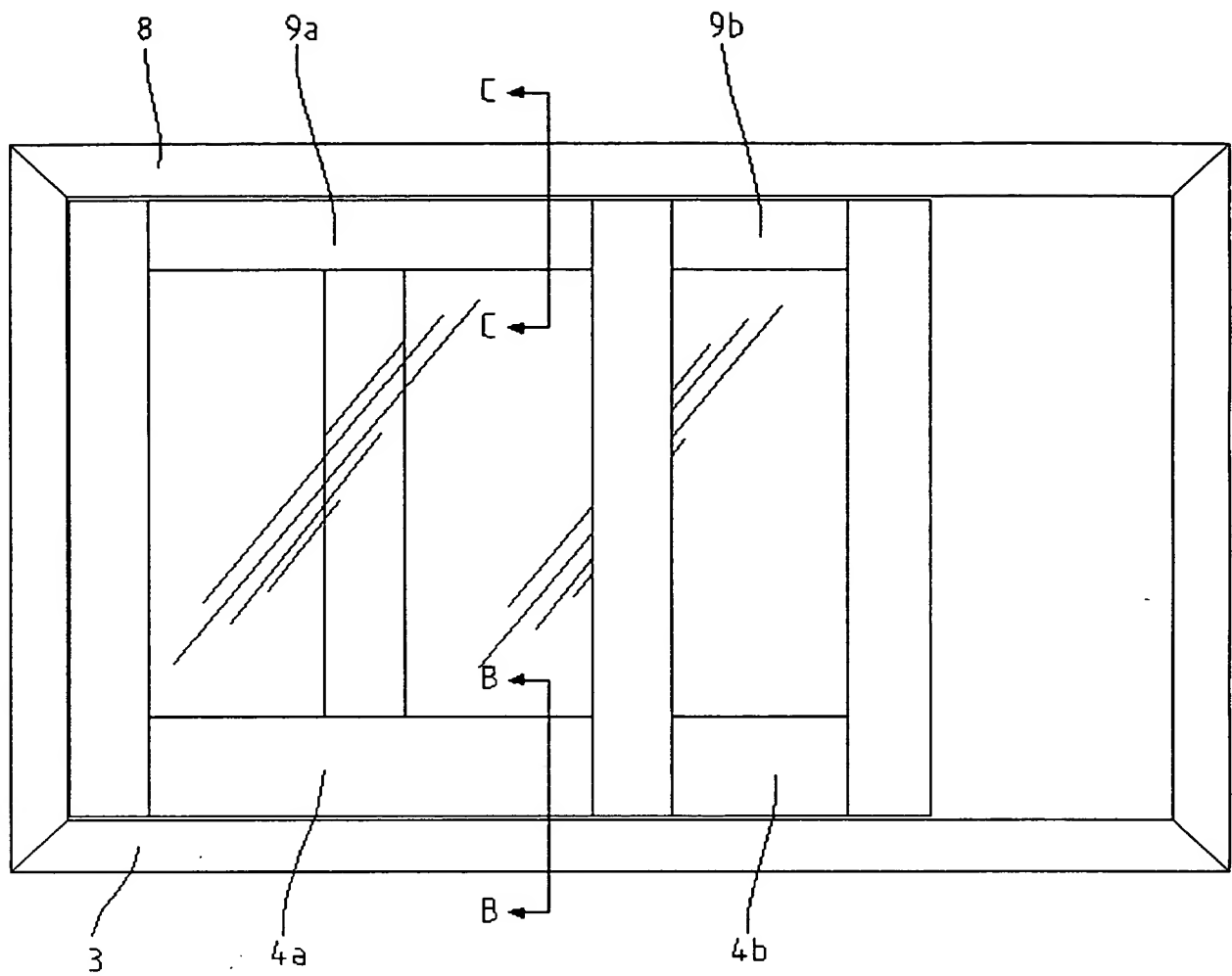
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【도 2】



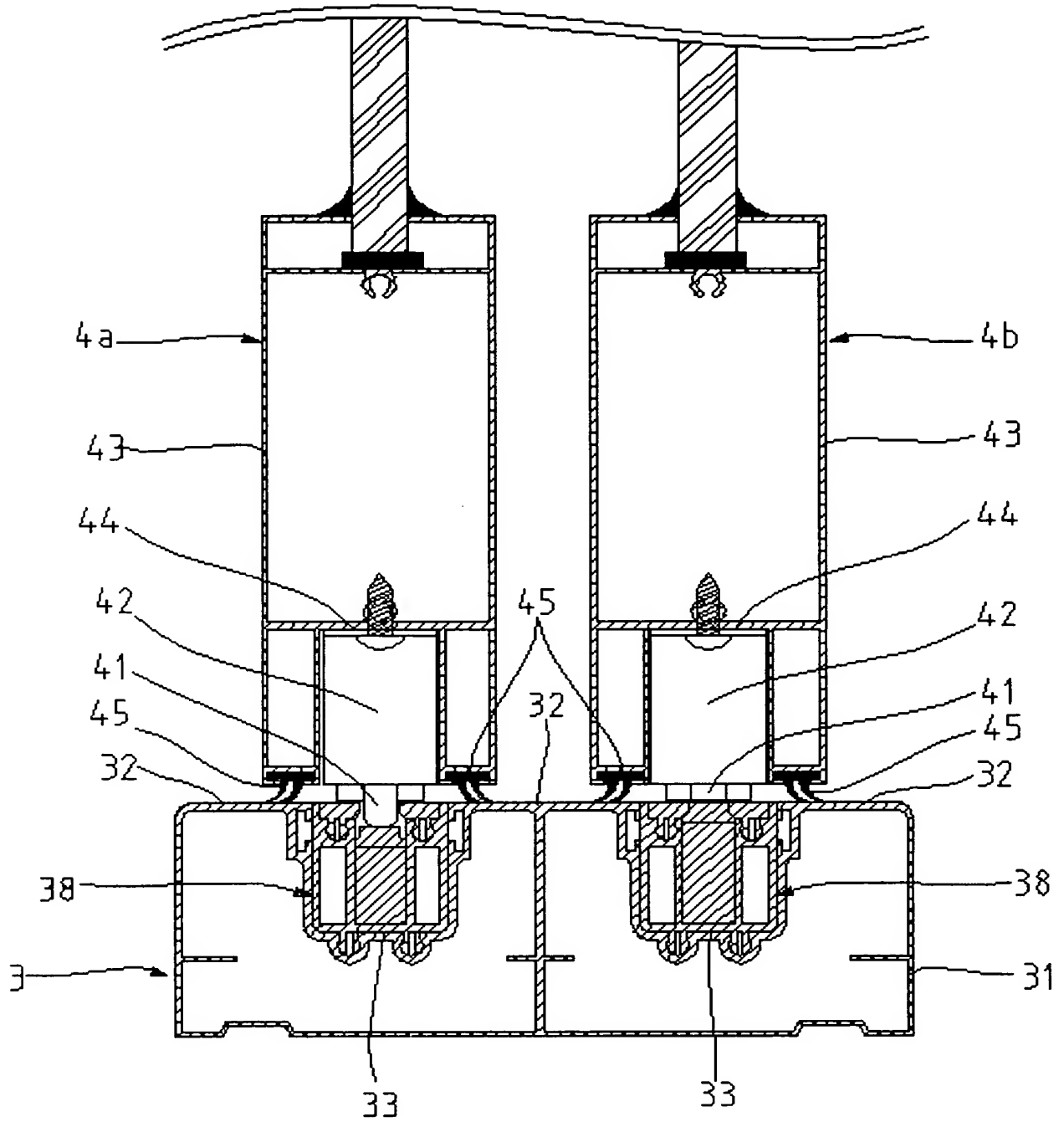
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【도 3】



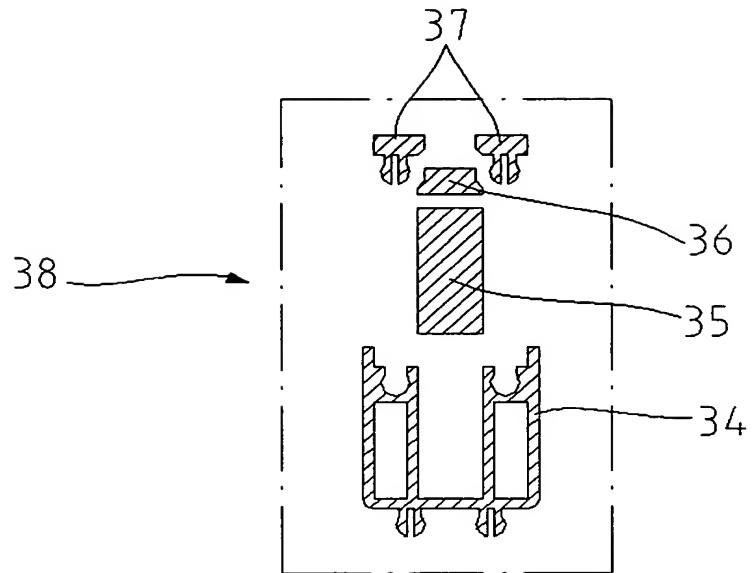
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【도 4】



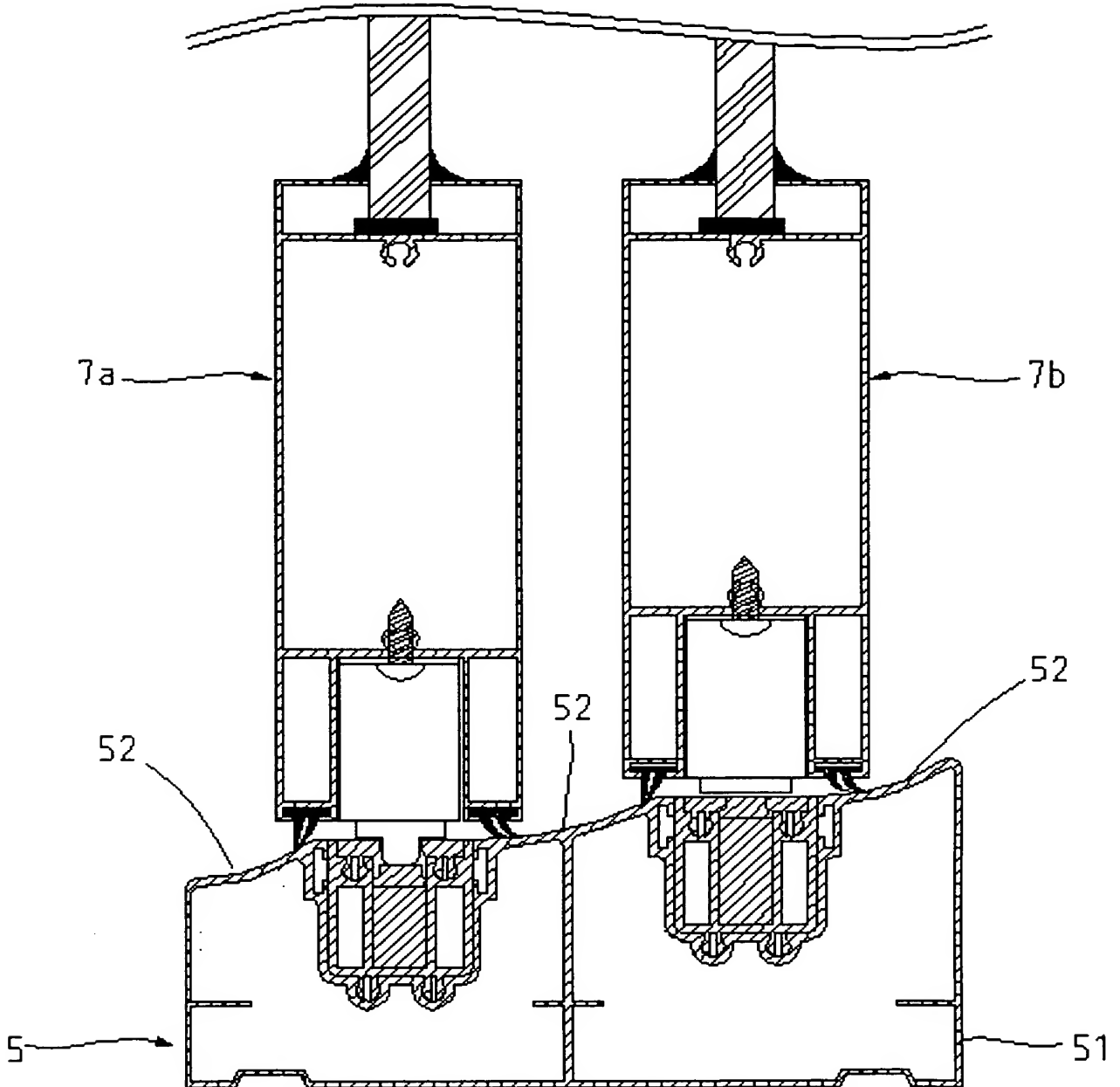
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【도 5】

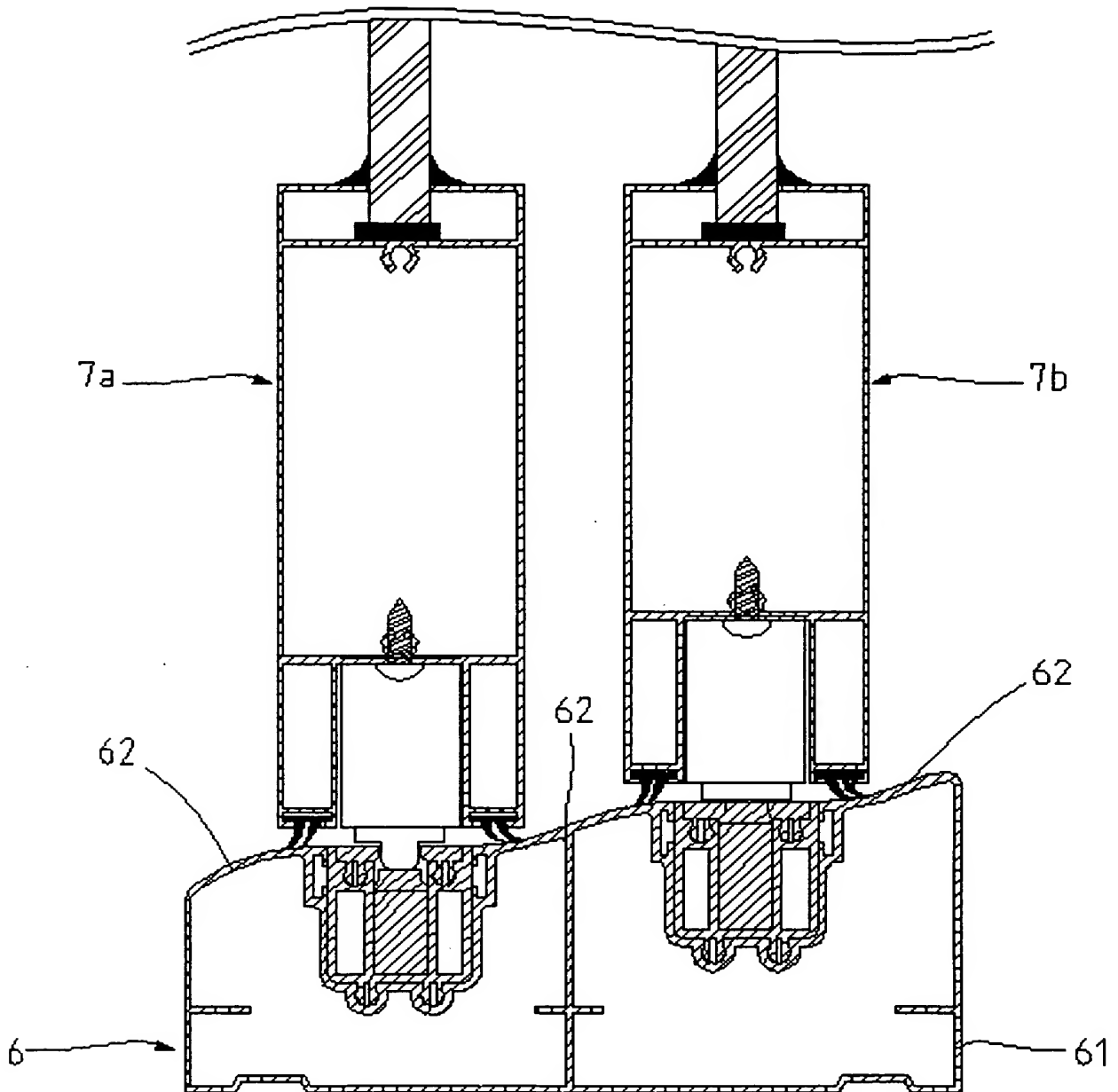


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【도 6】

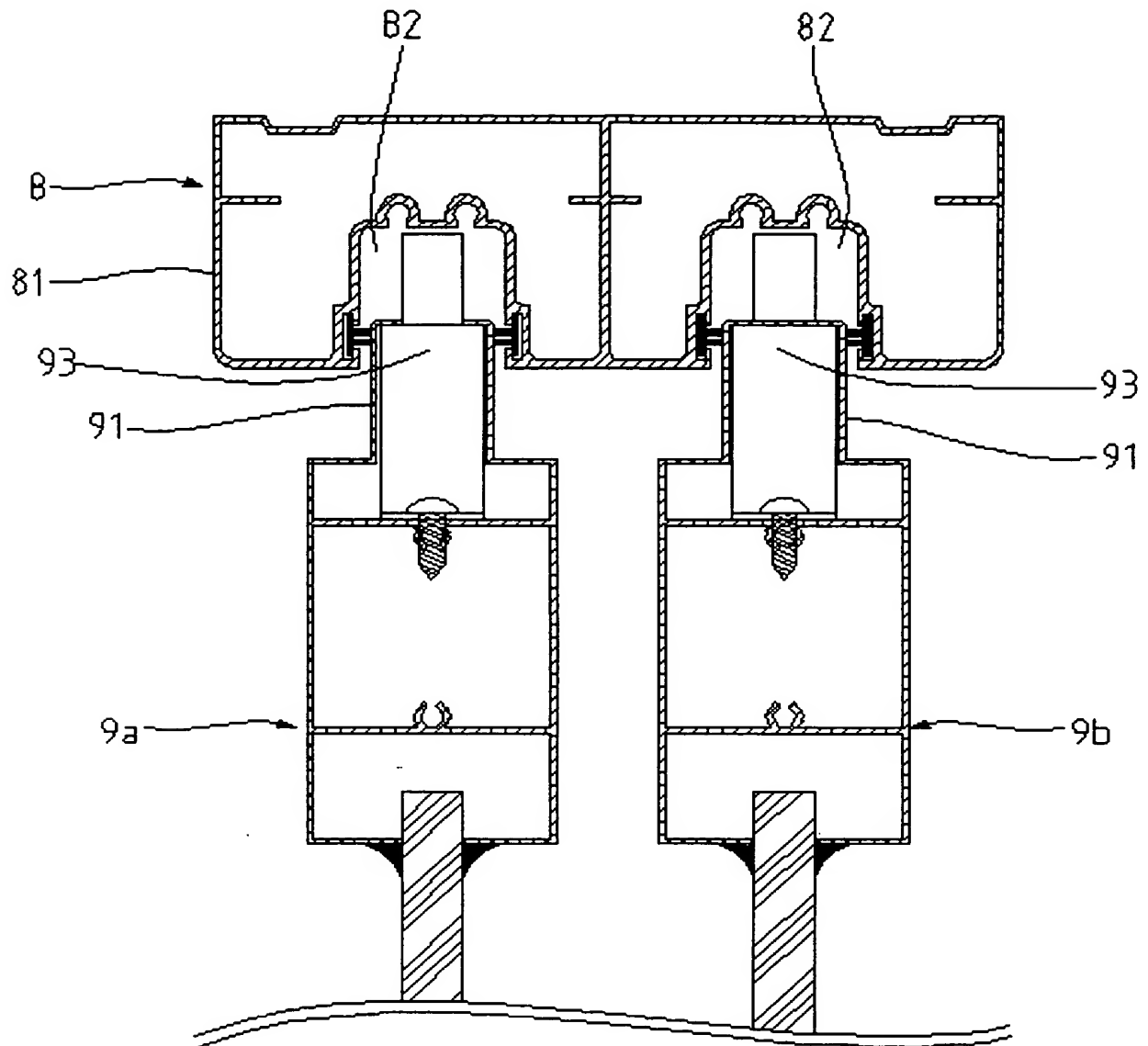


【도 7】



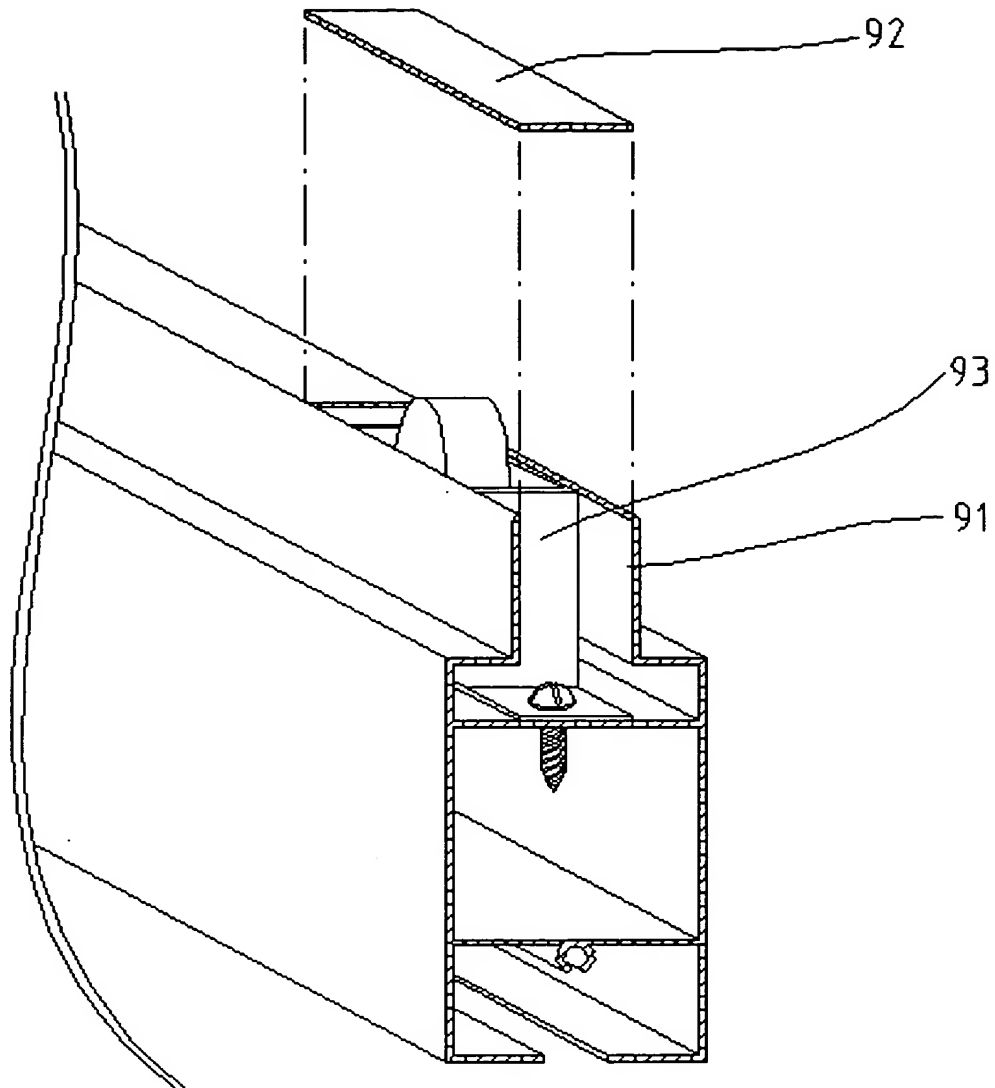
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【도 8】



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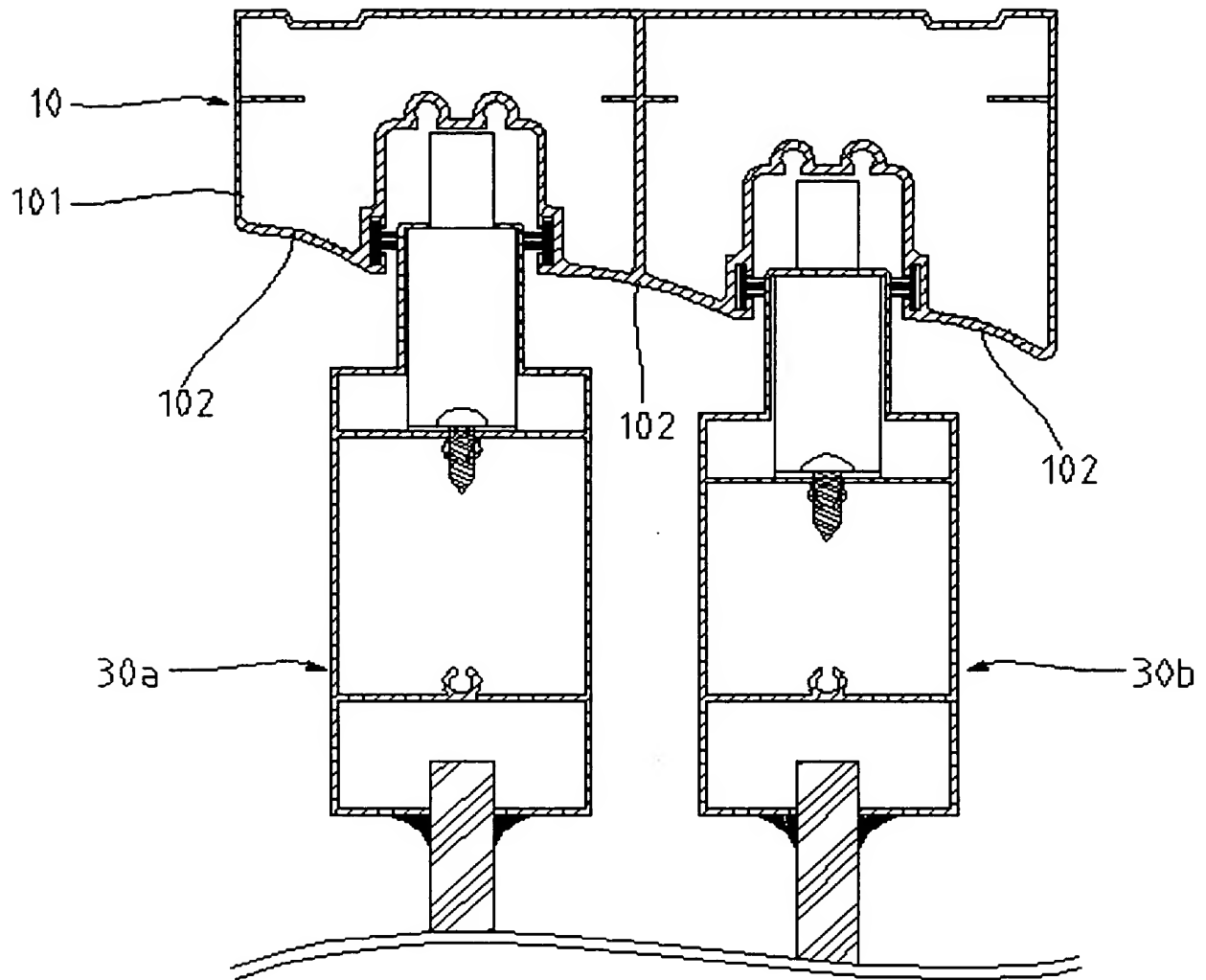
【도 9】



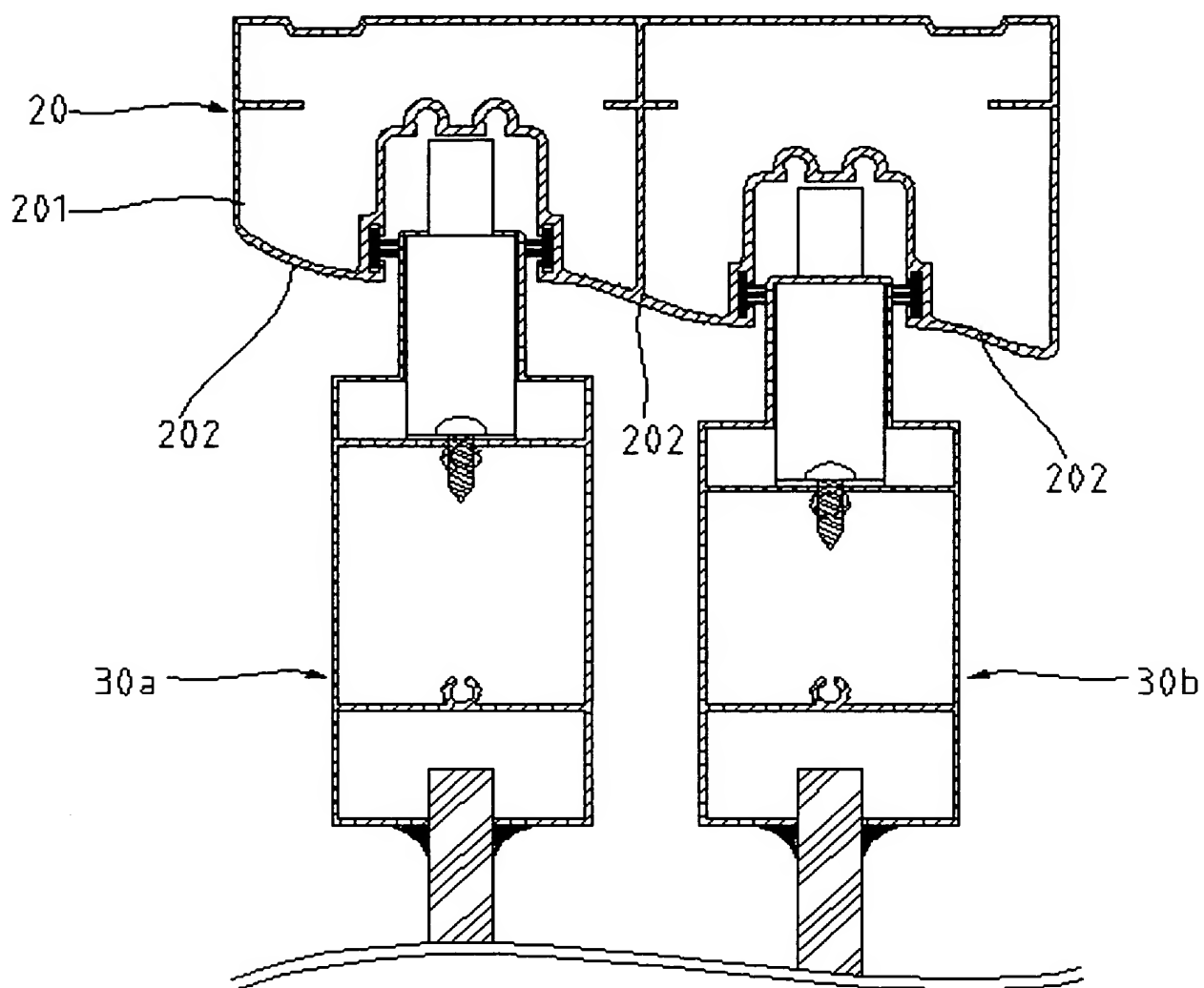


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【도 10】

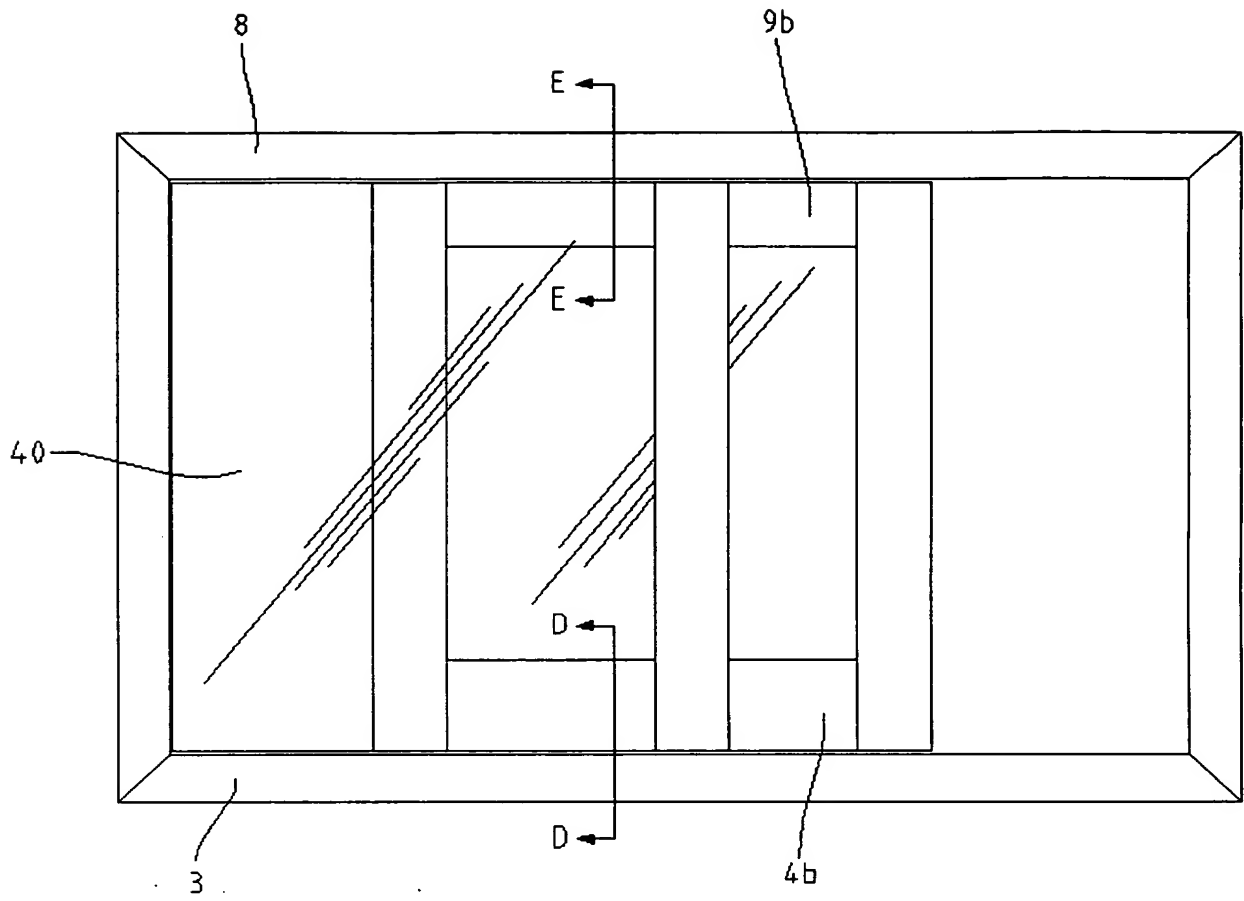


【도 11】



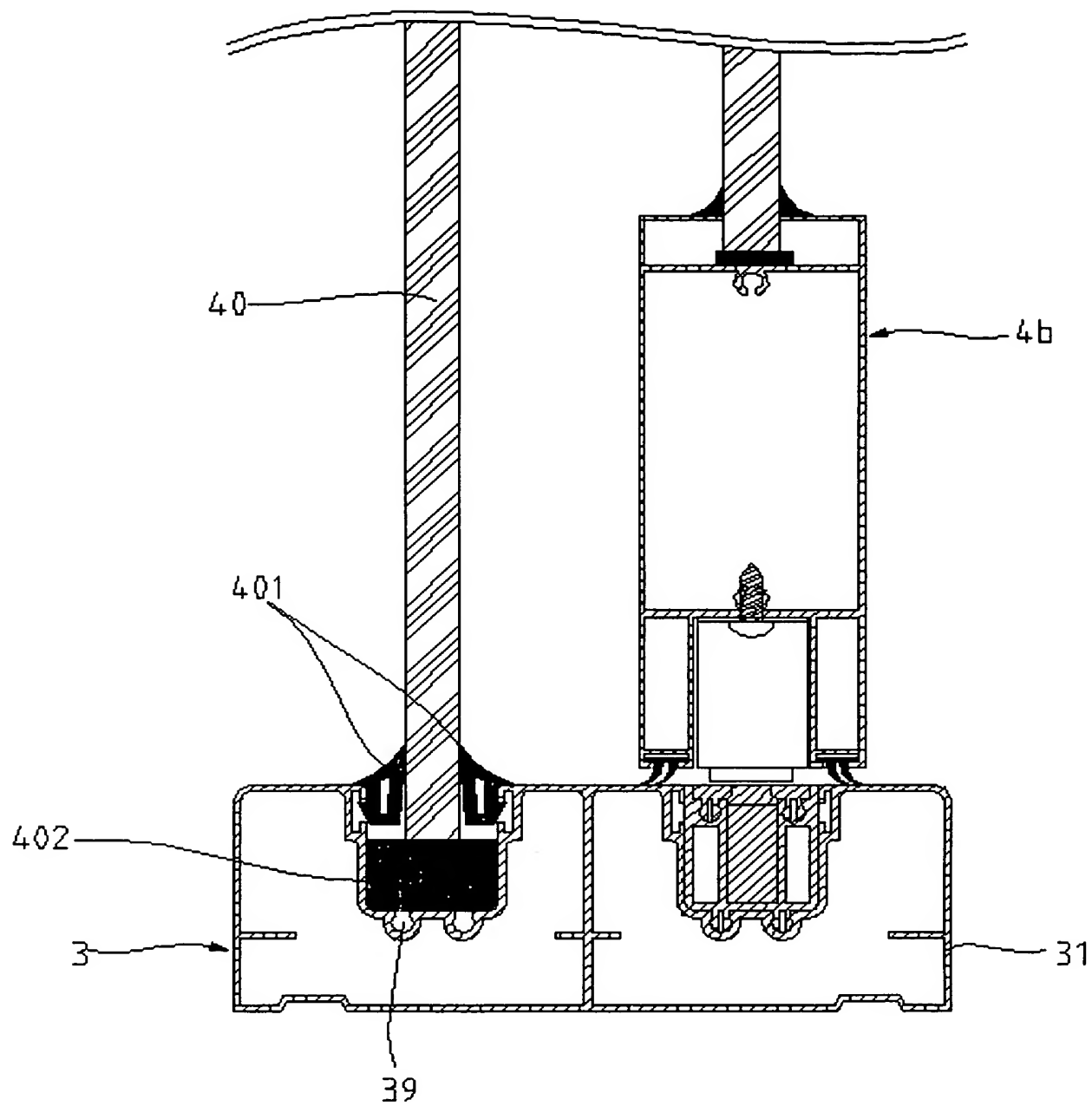
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【도 12】



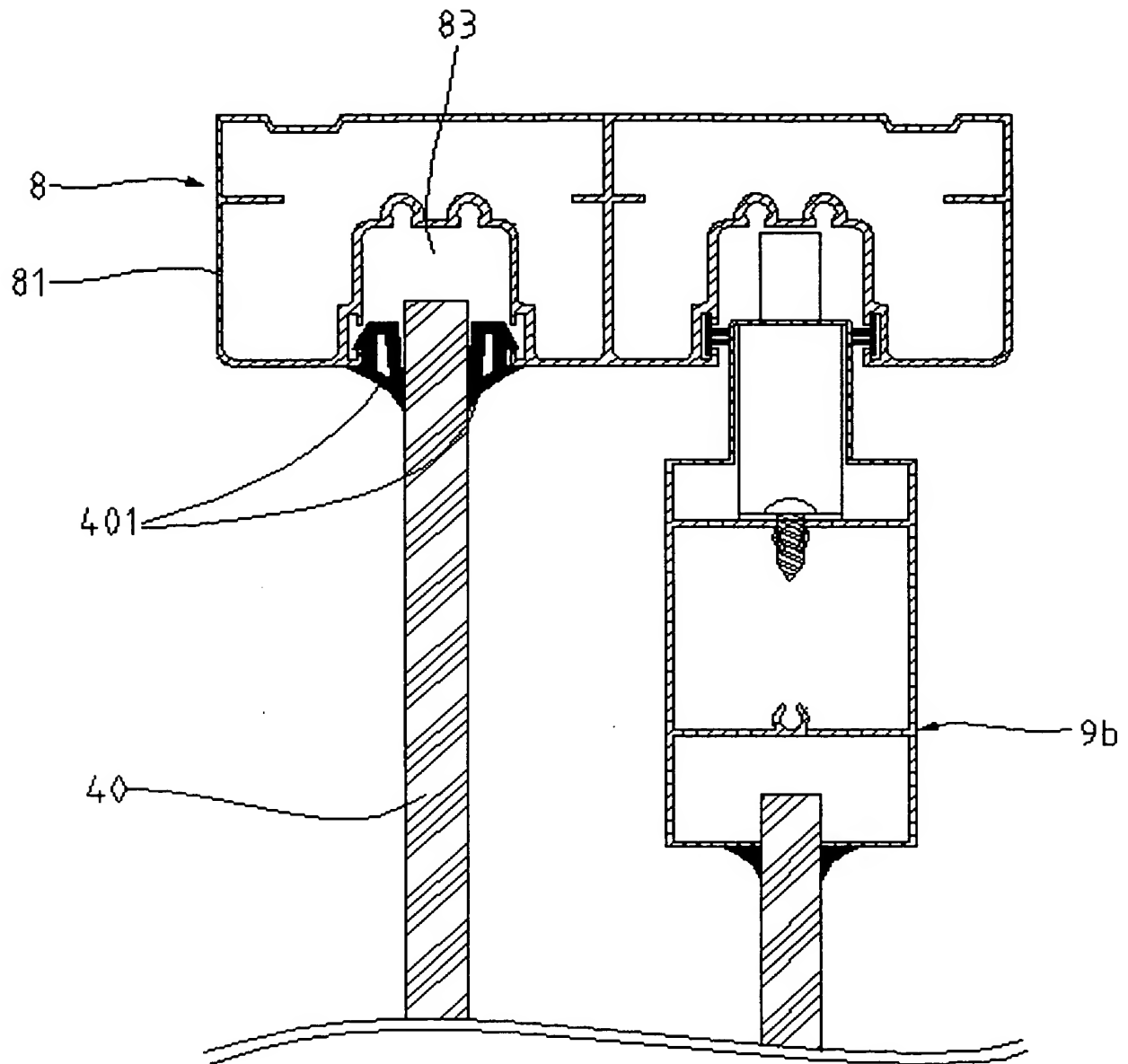
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【도 13】



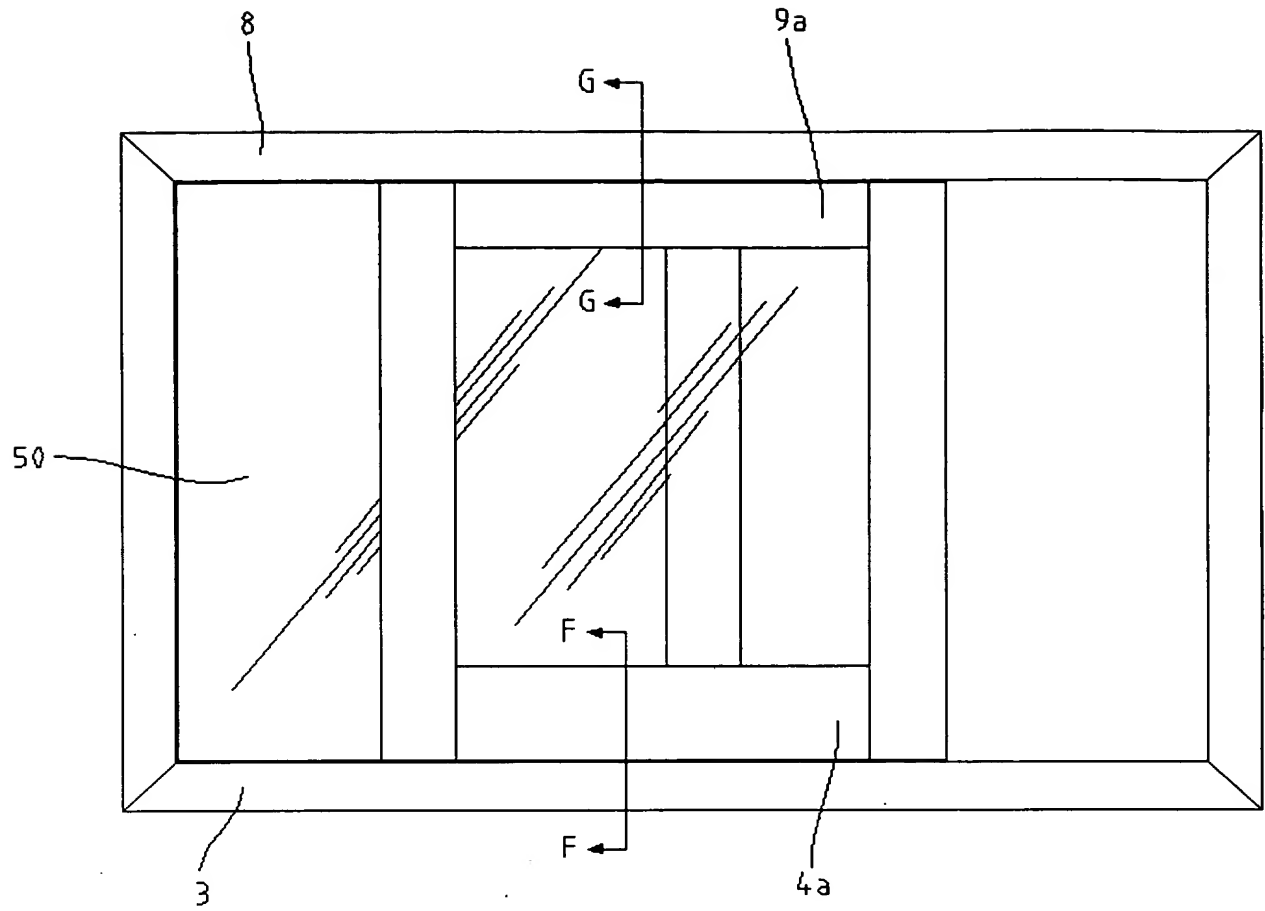
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【도 14】



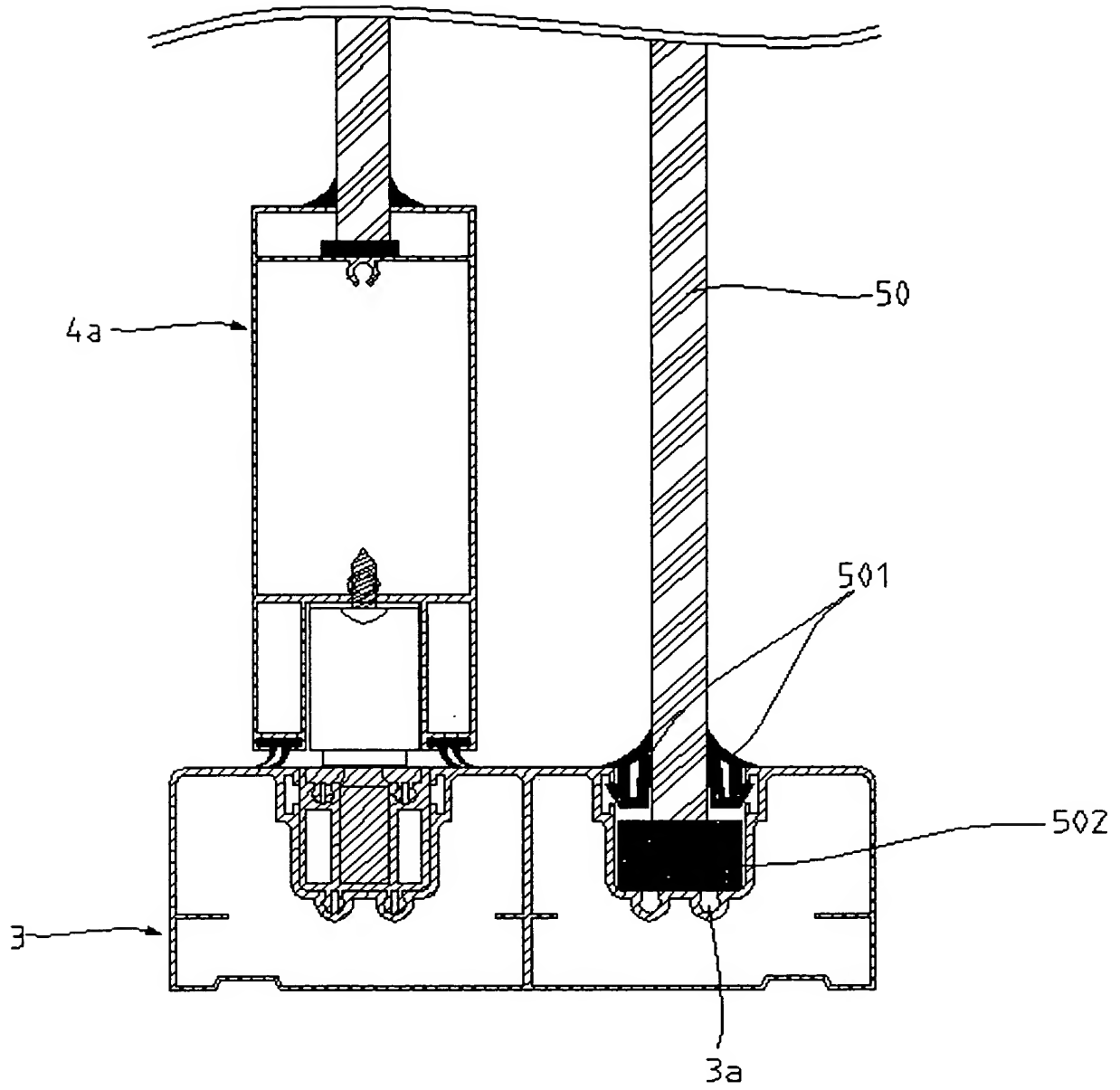
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【도 15】



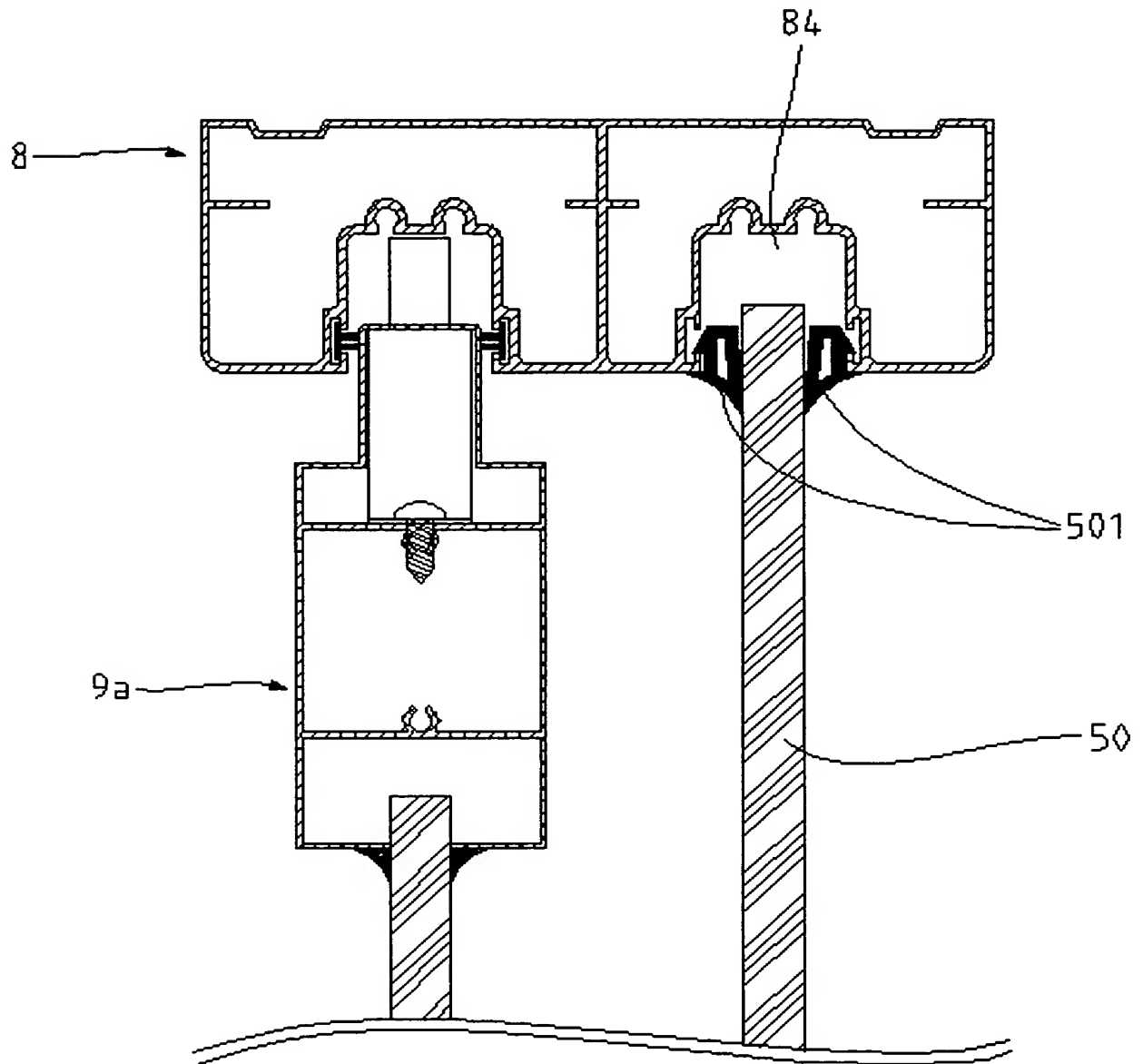
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【도 16】



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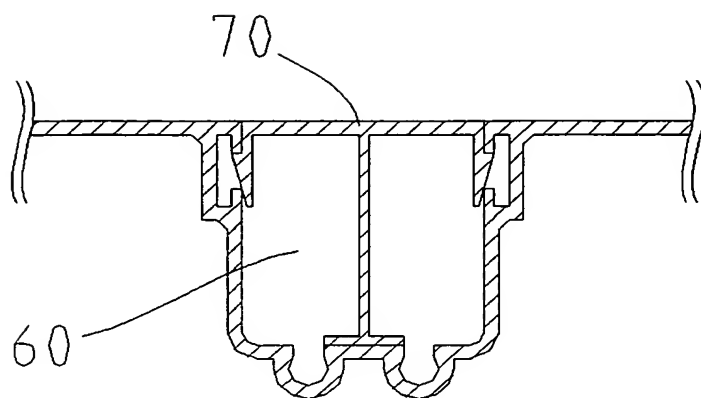
【도 17】





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【도 18】



레일채움형 슬라이딩 창호장치  
THE SLIDING WINDOW AND DOOR SYSTEM OF FILLING A RAIL

5 발명이 속하는 기술분야 및 그 분야의 종래기술

다음의 명세서에서 문도 창과 동일하므로, 창에 대한 설명은 문을 포함한다.

본 발명의 슬라이딩 창호장치는 창틀 상, 하, 좌, 우 부재를 사각  
 10 형으로 조립하여 창틀을 구성하고 벽면에 설치하며, 창짝 상, 하, 좌, 우  
 부재를 사각형으로 조립하여 창짝을 구성하고 창틀에 설치함으로써 실외  
 의 먼지, 빗물, 공기, 소음, 열흐름을 차단한다.

다음에, 그 구조에 대하여 첨부된 도면을 참조하여 설명한다.

도 1은 종래의 창호장치가 적용된 창호를 도시한 정면도로서, 그  
 구조를 설명하기 위하여 화살표 A-A 선에 따른 단면을 도 2에 도시한다.

15 도 2는 도 1의 화살표 A-A 선에 따른 단면도로서, 종래 창호장치  
 의 구조를 도시한다.

종래의 창호장치는, 노출된 레일(11,11)이 구성된 창틀하부재(1)  
 와, 로울러(21,21)를 레일(11,11)위에 배열·설치하고, 모헤어부재  
 (22,22,22,22)와 레일(11,11)에 의해 안내되어 개폐되는 창짝하부재  
 20 (2a,2b)로 구성되어 있다.

발명이 이루고자 하는 기술적 과제

이러한 종래의 창호장치는 노출된 레일에 따라서 창짝이 개폐되므  
 로 빗물이 레일사이에서 배수되기 때문에 기밀성(氣密性), 수밀성(水密  
 性), 단열성의 획기적인 개량이 이루어질 수 없어 에너지효율을 낮추는  
 25 가장 큰 요인으로 작용하고 있다.

그리고 창짝을 단지 창틀에 끼워 넣기 때문에 분해·조립이 간편  
 하지만 강풍에 의한 유동 또는 인력에 의한 개폐시 창짝의 이탈 가능성이  
 높기 때문에 고층건물에 사용시 창짝이 창틀에서 이탈되어 낙하될 수 있  
 어 위험요소가 되고 있다.

또한 레일 사이에 퇴적되는 먼지 및 빗물의 자국들은 제거하기가  
 쉽지 않기 때문에 청소가 힘들고, 먼지의 퇴적을 방치하면 창짝의 개폐시  
 퇴적된 먼지가 일어나 공기를 탁하게 만드는 등 청결성의 유지가 힘들며,  
 레일 사이의 빗물 배수구가 먼지등에 의해 막힌 상태 또는 강풍을 동반한  
 5 폭우시에는 우수에 의한 피해를 입을 수 있다.

더욱이 요철방식의 하부구조는 미관개선의 한계를 가져온 주된 요  
 인이다.

따라서 상기와 같은 문제점을 해결하기 위해 발명된 것으로서, 본  
 발명의 목적은 종래의 레일구조를 레일이 없는 평면구조로 개량하여 기밀  
 10 성, 수밀성, 단열성을 획기적으로 향상시키고, 청결성 유지가 쉽고, 이탈  
 을 방지하여 안전성을 확보하고, 취향과 기능성에 따른 미관개선이 용이  
 한 더욱 고급화된 창호장치를 제공하는데 있다.

상기의 목적을 달성하기 위하여 본 발명은, 창틀(또는 문틀)모재  
 에 표면재와 레일채움장치홈을 조성하고, 레일채움장치홈에 부합되는 레  
 15 일채움장치모재, 신축성부재, 레일채움부재 및 로울러받침부재로 구성된  
 레일채움장치를 레일채움장치홈에 삽입한 창틀(또는 문틀)하부재와; 레일  
 채움장치와 부합되도록 돌출부가 조성된 높이조절로울러를 창짝(또는 문  
 짝)모재에 조성된 로울러홈에 삽입하여 로울러가 돌출부와 레일채움장치  
 에 의해 안내되어 구동되도록 하고, 창짝(또는 문짝)모재와 표면재 사이  
 20 의 기밀성을 유지하기 위해 가스켓을 설치한 창짝(또는 문짝)하부재와;  
 창틀(또는 문틀)모재가 창틀(또는 문틀)하부재의 창틀(또는 문틀)모재와  
 동일하나 레일채움장치홈을 창짝(또는 문짝)상부재의 상단삽입부가 삽입  
 되는 지지홈으로 한 창틀(또는 문틀)상부재와; 상단삽입부에 이탈방지조  
 절로울러를 설치하여 창짝(또는 문짝)의 이탈방지구조를 조성한 창짝(또  
 25 는 문짝)상부재로 구성되어 평면구조로 한 것을 특징으로 하는 레일채움  
 형 슬라이딩 창호장치를 제공한다.

#### 도면의 간단한 설명

도 1은 종래의 창호장치가 적용된 창호를 실외에서 본 입면도.

도 2는 도 1에서 화살표 A-A 선에 따른 단면도.

도 3은 본 발명의 레일채움형 창호장치가 적용된 창호를 실외에서 본 입면도.

도 4는 도 3에서 화살표 B-B 선에 따른 단면도.

5 도 5는 도 4의 레일채움장치의 구조도.

도 6은 도 4의 다른 실시예.

도 7은 도 4의 다른 실시예.

도 8은 도 3에서 화살표 C-C 선에 따른 단면도.

도 9는 도 8의 이탈방지로울러의 설치도.

10 도 10은 도 8의 다른 실시예.

도 11은 도 8의 다른 실시예.

도 12는 본 발명에서 실외측 창짝(또는 문짝)이 고정창(또는 고정문)으로 대체된 창호를 실외에서 본 입면도.

도 13은 도 12에서 화살표 D-D 선에 따른 단면도.

15 도 14는 도 12에서 화살표 E-E 선에 따른 단면도.

도 15는 본 발명에서 실내측 창짝(또는 문짝)이 고정창(또는 고정문)으로 대체된 창호를 실외에서 본 입면도.

도 16은 도 15에서 화살표 F-F 선에 따른 단면도.

도 17은 도 15에서 화살표 G-G 선에 따른 단면도.

20 도 18은 고정창(또는 고정문) 홈덮개의 설치도.

### 발명의 구성

다음에, 본 발명의 실시예에 대하여 첨부된 도면을 참조하여 설명한다.

25 다음에 설명하는 단면도에서, "실외측, 실내측"으로 표기한 것은 각각 도면의 "좌측, 우측"을 의미한다.

도 3은 본 발명의 레일채움형 창호장치가 적용된 창호를 실외에서 본 입면도로서, 그 구조를 설명하기 위하여 화살표 B-B, C-C 선에 따른 단면도를 도 4, 도 6, 도 7, 도 8, 도 10, 도 11에 도시한다.

도 4, 도 6 및 도 7은 도 3의 B-B선에 따른 단면도로서, 레일채움형 슬라이딩 창호장치의 중요구성요소를 도시한다.

도 4에서, 창틀하부재(3)는 창틀모재(31)에 표면재(32,32,32)와 레일채움장치(38,38)의 설치를 위한 레일채움장치홈(33,33)을 조성하고, 5 레일채움장치홈(33,33)과 부합되는 레일채움장치모재(34), 신축성부재(35), 레일채움부재(36) 및 로울러받침부재(37)로 구성된 레일채움장치(38)를 창틀모재(31)에 조성된 레일채움장치홈(33,33)에 삽입함으로써 평면구조를 조성한다.(도 5의 레일채움장치의 구조도 참조)

창짝하부재(4a,4b)는 레일채움장치(38,38)와 부합되도록 돌출부 10 (41,41)가 조성된 높이조절로울러(42,42)를 창짝모재(43,43)에 조성된 로울러홈(44,44)에 삽입하여 로울러(42,42)가 돌출부(41,41)와 레일채움장치(38,38)에 의해 안내되어 구동되도록 하고, 창짝모재(43,43)와 표면재(32,32,32)사이의 기밀성을 유지하기 위해 가스켓(45,45,45,45)을 설치하여 창틀하부재(3)와 부합되도록 구성한다.

15 상기한 창틀하부재(3)의 레일채움장치(38,38)와 창짝하부재(4a,4b)의 돌출부(41,41)가 조성된 높이조절로울러(42,42)의 작동 및 구동원리를 설명하면 다음과 같다.

로울러(42,42)의 돌출부(41,41)는 레일채움장치(38,38)의 레일채움부재(36)를 누르고 신축성부재(35)를 수축시켜 로울러받침부재(37) 사 20 이에 조성되는 홈에 삽입되고, 로울러(42,42)는 돌출부(41,41)와 로울러받침부재(37) 사이의 홈에 안내되어 구동한다. 로울러(42,42)가 구동되어 부재시, 수축되었던 신축성부재(35)는 원상복귀하고 레일채움부재(36)는 로울러받침부재(37) 사이의 홈을 채움으로서 평면을 이루는 것이다.

도 6과 도 7에서, 상기 도 4의 평면구조를 액자형구조로 조성하 25 기 위해, 창틀하부재(5,6)는 창틀모재(51,61)에 표면재(52,52,52,62,62,62)를 액자형으로 조성함으로써 빗물의 외부안내를 원활히 하고, 미관을 액자형으로 조성한다.

창짝하부재(7a,7b)는 창틀하부재(5,6)와 부합되도록 높이를 조정

한다.

도 8, 도 10, 도 11은 도 3의 C-C선에 따른 단면도로서, 레일채움형 창호장치의 중요구성요소를 도시한다.

도 8에서, 창틀상부재(8)의 창틀모재(81)는 상기 도 4의 창틀하부재(3)의 창틀모재(31)와 동일하지만 창호의 상부에 설치됨으로써 레일채움장치홈(33,33)을 창작상부재(9a,9b)의 상단삽입부(91,91)가 삽입되는 지지홈(82,82)으로 한다.

창작상부재(9a,9b)는 창틀상부재(8)과 부합되도록 상단삽입부(91,91)를 구성하고, 상단삽입부(91,91)의 절단부(92)를 절단하여 창작의 이탈을 방지하는 이탈방지조절로울러(93,93)를 설치한다.(도 9의 설치도 참조)

창작의 이탈이 방지되는 구조를 설명하면 다음과 같다.

상단삽입부(91,91)의 설치를 위해 이탈방지조절로울러(93,93)의 높이를 하향조절하고, 상단삽입부(91,91)를 지지홈(82,82)에 깊이 삽입하여 하부재의 설치를 용이하게 하며, 하부재의 설치후 상단삽입부(91,91)와 지지홈(82,82) 사이에 형성되는 내부공간을 이탈방지조절로울러(93,93)의 높이를 상향조절하여 마감한다.

도 8은 설치가 완료된 상태의 도면으로서, 창작상부재(9a,9b)는 이탈방지조절로울러(93,93)에 의해 이탈이 불가능한 상태를 나타낸다.

창틀상부재(8)의 창틀모재(81)도 창틀하부재(3)의 창틀모재(31)과 동일하기 때문에 평면구조를 액자형구조로 구성할 수 있다.

도 10, 도 11은 액자형구조의 창틀상부재(10,20)와, 이와 부합되도록 높이가 조정된 창작상부재(30a,30b)를 나타낸다.

도 12는 본 발명에서 실외측 창작이 고정창으로 대체된 창호를 실외에서 본 입면도로서, 그 구조를 설명하기 위하여 화살표 D-D, E-E선에 따른 단면도를 도 13, 도 14에 도시한다.

도 13에서, 창틀하부재(3)는 실외측 레일채움장치홈(39)에 고정창(40)을 설치하고, 가스켓(401)과 받침부재(402)로 마감하여 실외측창작

(4a)를 대체한다.

도 14에서, 창틀상부재(8)는 실외측 지지홈(83)에 고정창(40)을 설치하고, 가스켓(401)으로 마감하여 실외측창짝(9a)를 대체한다.

도 15는 본 발명에서 실내측 창짝이 고정창으로 대체된 창호를  
5 실외에서 본 입면도로서, 그 구조를 설명하기 위하여 화살표 F-F, G-G 선에 따른 단면도를 도 16, 도 17에 도시한다.

도 16에서, 창틀하부재(3)는 실내측 레일채움장치홈(3a)에 고정창(50)을 설치하고, 가스켓(501,501)과 받침부재(502)로 마감하여 실내측 창짝(4b)를 대체한다.

10 도 17에서, 창틀상부재(8)는 실내측 지지홈(84)에 고정창(50)을 설치하고, 가스켓(501,501)으로 마감하여 실내측창짝(9b)를 대체한다.

도 18은 상기 도 13, 도 14, 도 16, 도 17에서 고정창(40,50)이 없는 구간의 홈(60)을 고정창홈덮개(70)로 마감한 부분의 도면이다.

#### 발명의 효과

15 앞에서 설명한 바와 같이, 본 발명에 의하면 종래는 레일이 노출되어 있기 때문에 레일에 배수구를 조성하여 빗물을 배수 하였으나, 본 발명으로 표면상에서 빗물을 외부로 안내하기 때문에 실내로의 유입이 근본적으로 차단되고, 배수구를 별도로 조성하지 않기 때문에 기밀성, 수밀성, 단열성을 향상시킬 수 있으며, 가공공정이 줄기 때문에 생산성을 향상시킬 수 있다.  
20

상부구조에서는 이탈방지의 구조를 적용하여 창짝의 상·하 유동을 방지하므로 별도의 수조작 없이는 강풍에 의한 유동 또는 인력에 의한 개폐시 이탈되는 문제점을 해결하여 안전성을 확보하였다.

종래의 창호장치는 레일이 마모되면 창짝의 유동과 소음이 발생하여 이를 해결하기 위해 창틀 전체를 교체해야 하는 문제점이 있었으나,  
25 본 발명은 레일채움장치만 교체하면 되기 때문에 종래 창호장치의 교체에 따른 각종 비용 및 시간등을 절감할 수 있다.

또한 본 발명은 종래와 같은 요철구조가 아닌 표면구조를 형성하

기능성에 따라 평면형 또는 액자형등 미관의 개량이 용이해졌다.

이와 같이 본 발명으로 종래기술의 문제점을 모두 해결한 더욱 고  
급화된 창호를 제공할 수 있는 것이다.



## 특허청구범위

1. 창틀(또는 문틀)모재(31)에 표면재(32,32,32)와 레일채움장치홈(33,33)을 구성하고, 레일채움장치홈(33,33)에 부합되는 레일채움장치모재(34), 신축성부재(35), 레일채움부재(36) 및 로울러받침부재(37)로 구성된 레일채움장치(38,38)를 레일채움장치홈(33,33)에 삽입한 창틀(또는 문틀)하부재(3)와;

레일채움장치(38,38)와 부합되도록 돌출부(41,41)가 조성된 높이 조절로울러(42,42)를 창짝(또는 문짝)모재(43,43)에 조성된 로울러홈(44,44)에 삽입하여 로울러(42,42)가 돌출부(41,41)와 레일채움장치(38,38)에 의해 안내되어 구동되도록 하고, 창짝(또는 문짝)모재(43,43)와 표면재(32,32,32) 사이의 기밀성을 유지하기 위해 가스켓(45,45,45,45)을 설치한 창짝(또는 문짝)하부재(4a,4b)와;

창틀(또는 문틀)모재(81)가 창틀(또는 문틀)하부재(3)의 창틀(또는 문틀)모재(31)와 동일하나 레일채움장치홈(33,33)을 창짝(또는 문짝)상부재(9a,9b)의 상단삽입부(91,91)가 삽입되는 지지홈(82,82)으로 한 창틀(또는 문틀)상부재(8)와;

상단삽입부(91,91)에 이탈방지조절로울러(93,93)를 설치하여 창짝(또는 문짝)의 이탈방지구조를 조성한 창짝(또는 문짝)상부재(9a,9b)로 구성되어 평면구조로 한 것을 특징으로 하는 레일채움형 슬라이딩 창호장치.

2. 청구항 1에 있어서,

표면재(52,52,52,62,62,62)를 액자형으로 조성한 창틀(또는 문틀)하부재(5,6)와;

이와 부합되도록 높이를 조정한 창짝(또는 문짝)하부재(7a,7b)와;  
25 표면재(102,102,102,202,202,202)를 액자형으로 조성한 창틀(또는 문틀)상부재(10,20)와;

이와 부합되도록 높이를 조정한 창짝(또는 문짝)상부재(30a,30b)로 구성되어 액자형 구조로 한 것을 특징으로 하는 레일채움형 슬라이딩

창호장치.

3. 청구항 1 또는 청구항 2에 있어서,

실외측 창짝(또는 문짝)(4a, 7a, 9a, 30a) 또는 실내측 창짝(또는 문  
짝)(4b, 7b, 9b, 30b)을 고정창(또는 고정문)(40, 50)으로 대체하고, 가스켓  
5 (401, 401, 501, 501)으로 마감하며, 고정창(또는 고정문)이 설치되지 않은  
구간의 홈(60)은 고정창(또는 고정문)홈덮개(70)로 마감한 것을 특징으로  
하는 레일채움형 슬라이딩 창호장치.

요약서

본 발명은 레일채움형 슬라이딩 창호 장치에 관한 것으로, 창틀  
(또는 문틀)모재에 표면재와 레일채움장치홈을 조성하고, 레일채움장치홈  
에 부합되는 레일채움장치모재, 신축성부재, 레일채움부재 및 로울러받침  
5 부재로 구성된 레일채움장치를 레일채움장치홈에 삽입한 창틀(또는 문틀)  
하부재와, 레일채움장치와 부합되도록 돌출부가 조성된 높이조절로울러를  
창짝(또는 문짝)모재에 조성된 로울러홈에 삽입하여 로울러가 돌출부와  
레일채움장치에 의해 안내되어 구동되도록 하고, 창짝(또는 문짝)모재와  
표면재 사이의 기밀성을 유지하기 위해 가스켓을 설치한 창짝(또는 문짝)  
10 하부재와, 창틀(또는 문틀)모재가 창틀(또는 문틀)하부재의 창틀(또는 문  
틀)모재와 동일하나 레일채움장치홈을 창짝(또는 문짝)상부재의 상단삽입  
부가 삽입되는 지지홈으로 한 창틀(또는 문틀)상부재와, 상단삽입부에 이  
탈방지조절로울러를 설치하여 창짝(또는 문짝)의 이탈방지구조를 조성한  
창짝(또는 문짝)상부재로 구성되어 평면구조로 한 것을 특징으로 한다.